

Total Mods for Fire in Pending Review: 305

Total Mods for report: 305

Proposed Code Modifications

This document created by the Florida Department of Business and Professional Regulation - 850-487-1824

TAC: Fire

Total Mods for **Fire** in **Pending Review: 305**

Total Mods for report: 305

Sub Code: Building

F7224

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Date Submitted	12/1/2018	**Section**	105.3.1.2	**Proponent**	Sean Guthrie
Chapter	1	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

Change threshold for fire detection and alarm plans to require engineers' seal

Rationale

The existing language is tied to a monetary value and is over thirty years old. Proposed language would tie the requirement for plan sealing to system size versus system value. Proposed language mirrors existing language within the same section regarding fire sprinkler systems. As the two systems (fire sprinkler and fire alarm & detection) are interconnected this proposed change would streamline and provide consistency in the design process.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Local plan reviewers would verify requirement of engineer's' seal by device count versus system contract value.

Impact to building and property owners relative to cost of compliance with code

Possible minimal decrease in cost of very small fire alarm & detection systems.

Impact to industry relative to the cost of compliance with code

Possible minimal decrease in cost of very small fire alarm & detection systems.

Impact to small business relative to the cost of compliance with code

Possible minimal decrease in cost of very small fire alarm & detection systems.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proposed modification impacts life safety systems upon which the general public rely to provide safety and well being from the threat of uncontrolled fires. This modification ensures that all fire detection and alarm systems are designed by competent personnel, unlike current language.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification improves and strengthens the building code by:
1) Streamlining the design process and providing consistency between interconnected systems.
2) Introducing requirements for system designer of systems not requiring engineers' seal which is currently not addressed or defined.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Proposed modification does not affect materials, products, methods or systems of construction.

Does not degrade the effectiveness of the code

This modification improves the effectiveness of the code by changing the requirement from system value to system size thus eliminating the effect of different pricing structures and inflation on the existing price based requirement.

1st Comment Period History

F7224-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:

Section 553.73(2), Florida Statutes

…Provisions relating to the personnel, supervision or training of personnel, or any other professional qualification requirements relating to contractors or their workforce may not be included within the Florida Building Code, and subsections (4), (6), (7), (8), and (9) are not to be construed to allow the inclusion of such provisions within the Florida Building Code by amendment. This restriction applies to both initial development and amendment of the Florida Building Code.

4.Any specialized mechanical, electrical, or plumbing document for any new building or addition which includes a medical gas, oxygen, steam, vacuum, toxic air filtration, or halon~~, or fire detection and alarm~~ system which costs more than $5,000.

7. Fire detection and alarm system documents for any new building or addition which includes a fire detection and alarm system which contains 50 or more points. Personnel meeting the requirements for System Designer as defined in National Fire Protection Association document 72 National Fire Alarm and Signaling Code edition adopted by Florida Administration Code 69A-3.012, may design a fire detection and alarm system of 49 or fewer points and may design the alteration of an existing fire detection and alarm system if the alteration consists of the relocation, addition or deletion of not more than 49 points, notwithstanding the size of the existing fire detection and alarm system.

- A point as defined by this section consists of any device or appliance as defined in National Fire Protection Association document 72 National Fire Alarm and Signaling Code edition adopted by Florida Administration Code 69A-3.012 that meets any of the following:
    1. Is powered by the fire detection and alarm system
    2. Sends a signal to the fire detection and alarm system
    3. Receives a signal from the fire detection and alarm system
- Combination devices are considered a single point if they:

    1. Consist of no more than two devices/appliances, and
    2. Are installed at a single mounting location

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F7518

Date Submitted	11/28/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The Code contains requirements regarding children's play structures. However, no definition exists and there have been discussions that there is some ambiguity about what is meant by the term, thus a definition should be included under Chapter 2.

Rationale

Sections of the Code contain requirements regarding children's play structures. However, no definition exists and there have been discussions that there is some ambiguity about what is meant by the term. The concept incorporated into this definition is that a children's play structure is one that: (a) is constructed of combustible materials, (b) is a structure into which the user (typically a child) enters and (c) has at least one structural component.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assists enforcement by providing good definition and ability to better define components of a play structure

Impact to building and property owners relative to cost of compliance with code

No impact as just defining

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This will be a positive impact on welfare of users by better defining equipment and safety aspects

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

By providing a definition that highlights the equipment allows for better focus and applicable enforcement for safety and welfare aspects

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate

Does not degrade the effectiveness of the code

Improves process and effectiveness

CHILDREN'S PLAY STRUCTURE. A structure composed of one or more components, where the user enters a play environment

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F7519

Date Submitted	11/28/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Currently the definition for sleeping unit could be interpreted to be just a bedroom. When these bedrooms are combined into suites, they should be considered as one sleeping unit, so this definitions better identifies the variations.

Rationale

Some hotel rooms, assisted living and dormitories are designed as suites. In a hotel or assisted living space, common designs are one or two bedrooms a living space and private bath. In a dorm, common designs are two rooms with a private bath between; or three or four bedrooms with a living space and private bathrooms. These units act as a group similar to an apartment. Currently the definition for sleeping unit could be interpreted to be just a bedroom. When these bedrooms are combined into suites, they should be considered as one sleeping unit.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Definition will assist in proper classification and review of projects as well as proper enforcement

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improved definition assists in proper enforcement which assists in welfare and safety areas

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves and helps in enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Definition does not have impact on this

Does not degrade the effectiveness of the code

Does not

Revise as follows:

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

SLEEPING UNIT. A ~~room~~ single unit providing rooms or ~~space in which people sleep, which~~ spaces for one or more persons, which can also include permanent provisions for living, eating, sleeping, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7519_TextOfModification_1.png

F7521

Date Submitted	11/28/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Inserts definition for Opening Protective as this term is used extensively in the code, including the title of Section 716, but is not always understood by code users. This definition provides clarity.

Rationale

This term is used extensively in the code, including the title of Section 716, but is not always understood by code users. This definition provides clarity and ties this back to the proper section for proper coordination, usage of terms and proper system selection.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Supplies additional support for enforcement

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

Provides clarity

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

By defining term, will improve efficiency and compliance in areas of safety and welfare

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves definition and assists in focus of proper products and systems for construction

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate on compliant products meeting standards referenced in Code

Does not degrade the effectiveness of the code

No

Add new definition as follows:

OPENING PROTECTIVE. A *fire door assembly*, fire shutter assembly, *fire window assembly* or glass- block assembly in a fire-resistance-rated wall or partition.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7521_TextOfModification_1.png

F7524

Date Submitted	11/28/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Private garages can also be used by the owners of the building, so a definition will provide proper use and context.

Rationale

Private garages can also be used by the owners of a building.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Better definition assists in plan review, inspection and enforcement

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The definition allows better focus and enforcement with regards to better safety and user welfare

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Improves effectiveness

Revise as follows:

PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the owner or tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7524_TextOfModification_1.png

F7526

Date Submitted	11/28/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

To identify that "soft-contained play equipment structures" are those that contain pliable materials and where the user is enclosed.

Rationale

Section 424 discusses children's play structures and a definition is being proposed for that. Items 3, 6 and 7 of 424.2 also talks about "soft-contained play equipment structures", and a definition is being proposed for that as well, to identify that "soft- contained play equipment structures" are those that contain pliable materials and where the user is enclosed.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Definition will improve enforcement

Impact to building and property owners relative to cost of compliance with code

Assists in proper selection of products meeting safety and related requirements

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proper definition will assist is defining and selection by user of products appropriate and safe for their intended use

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides for more focused product selection

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate but provides better definition for product selection

Does not degrade the effectiveness of the code

No

Add new definition as follows:

SOFT CONTAINED PLAY EQUIPMENT STRUCTURE: A children's play structure containing one or more components where the user enters a play environment that utilizes pliable materials.

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F7689

Date Submitted	12/5/2018	**Section**	202	**Proponent**	George Wiggins (BOAF)
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

none

Summary of Modification

Changes Definition of "Change of Occupancy" by clarification of meaning and in a bulleted text for clarity.

Rationale

Provides clarity to definition of "Change of Occupancy" in a bulleted format

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies definition of "Change of Occupancy"

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves understanding of scope of "Change of Occupancy"

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Neutral to discrimination in these areas

Does not degrade the effectiveness of the code

Neutral in this area

Delete current definition in Florida and replace with updated definition (Text box here does not show a format to allow strike thru text)

[A] CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

New Definition:

CHANGE OF OCCUPANCY. A change in the use of a building or a portion of a building which results in:

1. A change of occupancy classification,

2. A change from one group to another group within an occupancy classification, or

Anychange in use within a group for which there is a change in the application of the requirements of thiscode.

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F7769

Date Submitted	12/8/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Defining open air assembly

Rationale

As there is no current definition for this, it is defined for ease of enforcement and correct application of other Code requirements

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Definition will allow for proper Code enforcement in this use

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by focusing on use and coordinating with other requirements

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Add the following definition:

OPEN-AIR ASSEMBLY SEATING. Seating served by *means of egress* that is not subject to smoke accumulation within or under a structure and is open to the atmosphere.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7769_TextOfModification_1.png

F7770

Date Submitted	12/8/2018	**Section**	202	**Proponent**	Ann Russo5
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Defining open air assembly by eliminating conflict with other definition

Rationale

Better defined for ease of enforcement and correct application of other Code requirements

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Definition will allow for proper Code enforcement in this use

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by focusing on use and coordinating with other requirements

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

SMOKE-PROTECTED ASSEMBLY SEATING. Seating served by *means of egress* that is not subject to smoke accumulation within or under a structure for a specified design time by means of passive design or by mechanical ventilation.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7770_TextOfModification_1.png

F7850

Date Submitted	12/10/2018	**Section**	202	**Proponent**	Marcelo Hirschler
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

None

Summary of Modification

Adds definition for SOFT CONTAINED PLAY EQUIPMENT STRUCTURE, a term that is used for regulation.

Rationale

Section 424 discusses children's play structures and a definition is being proposed for that. Items 3, 6 and 7 of 424.2 also talks about "soft-contained play equipment structures", and a definition is being proposed for that as well, to identify that "soft-contained play equipment structures" are those that contain pliable materials.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarification - defines a term used in the code.

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No effect

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by clarifying a term

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate

Does not degrade the effectiveness of the code

Does not degrade the code

202 Add definition, as follows:

SOFT CONTAINED PLAY EQUIPMENT STRUCTURE. A children's play structure containing one or more components where the user enters a play environment that utilizes pliable materials.

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F7133

Date Submitted	10/18/2018	**Section**	302.1	**Proponent**	Steve Thomas
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

New 503.1.4

Summary of Modification

This change provides language outlining that occupied roofs shall be classified as an occupancy. The code cannot be used without knowing the occupancy of a space. Therefore, this change is a clarification to the current code requirements.

Rationale

Many buildings are being built or altered to create an occupied roof. The code is not clear as to the requirements for these "spaces". Chapter 10 takes care of the means of egress requirements. But, the rest of the code does not address these issues. Some areas are used as gathering spaces, dining areas, swimming pools, etc. The question has come up as to whether these uses are an "occupancy". Some jurisdictions classify them as occupancies and others do not. We were originally going to look at writing a much larger change that would state that they are not occupancies and provide exceptions throughout the code. However, the fact is that the code is an occupancy driven document. Therefore, we decided to use similar language in Section 302.1 combined with the language in Section 1004.5. An occupied roof would be classified to an occupancy that it most resembles. For example, a roof off of a private office would be classified as a Group B occupancy. However a roof above a restaurant would be classified as a Group A-2 occupancy.

This proposal provides users of the code some guidance and clarification on how to apply the provisions to an occupied roof.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact. This is just a clarification of the code requirements to assist the local entity

Impact to building and property owners relative to cost of compliance with code

No impact. This is just a clarification that will actually assist the owner by knowing how to address occupied roofs.

Impact to industry relative to the cost of compliance with code

No impact. This is just a clarification

Impact to small business relative to the cost of compliance with code

There is no impact on small business. This is just a clarification to assist in how small businesses would handle occupied roofs that they are already doing.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

By classifying an occupied roof as an occupancy, the health, safety and welfare provisions of the code can be applied equally. Right now there is not language to clarify that the occupied roof is an occupancy. Therefore, code officials are forced to make things up.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposal strengthens the code by clarifying that an occupied roof is an occupancy so that the provisions of the code can be applied equally.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This has no impact on materials, etc. This just a clarification of the code.

Does not degrade the effectiveness of the code

This helps with the effectiveness of the code by clarifying that an occupied roof is considered an occupancy.

302.1 General.

Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved. Occupied roofs shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard, and shall comply with Section 503.1.4.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7133_TextOfModification_1.png

F7372

Date Submitted	11/20/2018	**Section**	307.1.1	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds stationary fuel cell power systems, capacitor energy storage systems, and modifies stationary storage battery systems in the list of items that exempt hazardous classification of the occupancy.

Rationale

This proposed modification adds "stationary fuel cell power systems" and "capacitor energy storage systems" to the list of items that can be stored, used, or handled in an occupancy without having to classify the building as Group H. This simply recognizes that other energy technologies exist on the market today similar to item 9 for "stationary storage battery systems" that is being revised to correlate with the two new items mentioned. It does not make sense to only exempt batteries when fuel cell and capacitor systems have essential the same hazard or risk associated with them. All three items now point to the FFPC which contains strict rules for these energy systems to prevent fire and other occupancy hazards.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by ensuring these systems meet the requirements of the FFPC where stored, handled, or used in an occupancy.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by recognizing other energy systems on the market similar to batteries which are currently on the list of items in the Section.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the Florida Fire Prevention Code.

2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the Florida Fire Prevention Code.

3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.

4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment listed by an approved testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour fire barriers constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both.

5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).

6. Liquor stores and distributors without bulk storage.

7. Refrigeration systems.

8. The storage or utilization of materials for agricultural purposes on the premises.

9. Stationary storage battery systems installed in accordance with the Florida Fire Prevention Code.

~~9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the Florida Building Code, Mechanical.~~

10. Corrosive personal or household products in their original packaging used in retail display.

11. Commonly used corrosive building materials

12. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the Florida Fire Prevention Code.

13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.

14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the Florida Fire Prevention Code.

15. Mercantile occupancies offering for retail sale sparklers, novelties and trick noisemakers as defined at Section 791.01, Florida Statutes, and that are not defined as fireworks by Chapter 791, Florida Statutes. Storage of sparklers and other novelties or trick noisemakers as defined in Chapter 791, Florida Statutes, within mercantile occupancies shall be in accordance with Section 791.055, Florida Statutes.

16. Stationary fuel cell power systems installed in accordance with the Florida Fire Prevention Code.

17. Capacitor energy storage systems in accordance with the Florida Fire Prevention Code.

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F7464

Date Submitted	11/27/2018	**Section**	301	**Proponent**	Ann Russo1
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

301.1, 302, 302.1, 302.2 (New)

Summary of Modification

The purpose of this code change is to simply formalize these terms and explain their relationship. This will assist code practitioners in properly establishing applicable code requirements and improve uniformity and continuity in the identification of appropriate provisions.

Rationale

Properly classifying the purpose of a given building or structure is the very important first step in the design or analysis process. The reason for this is that the various designations account for the inherent hazards and risks typically associated with the intended purpose. Based on those hazards and risks, appropriate limitations and controls are assigned to the building or structure. The Florida Building Code uses several specific terms to identify the purpose of the building or structure. Those are: occupancy classification, use and function. Occupancy classification and use are often confused and function is misunderstood.
This proposal will inform users of the FBC of building classification and assist all concerned in the proper communication of applicable code requirements.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will provide clarification between the terms of 'use' and 'occupancy'. Too often they are treated to be the same when they are really distinct terms. The proposal clarifies the difference.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost of compliance with code.

Impact to industry relative to the cost of compliance with code

Will not increase cost of compliance with code.

Impact to small business relative to the cost of compliance with code

Will not increase cost of compliance with code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proposal simply provide clarification of current requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Proposal simply provide clarification of current requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Proposal simply provide clarification of current requirements.

Does not degrade the effectiveness of the code

Proposal simply provide clarification of current requirements.

Revise as follows:

SECTION 301

~~GENERAL~~SCOPE

301.1 ~~Scope.~~General. The provisions of this chapter shall control the classification of all buildings and structures as to ~~use~~ occupancy and use. Different classifications of occupancy and use represent varying levels of hazard and risk to building occupants and adjacent properties.

SECTION 302

OCCUPANCY CLASSIFICATION AND USE DESIGNATION

302.1 Occupancy classification. ~~General.~~ ~~Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section.~~ Occupancy classification is the formal designation of the primary purpose of the building, structure or portion thereof. Structures shall be classified into one or more of the occupancy groups listed in this section based on the nature of the hazards and risks to building occupants generally associated with the intended purpose of the building or structure. An area, ~~A~~ room or space that is intended to be occupied at different times for different purposes shall comply with all ~~of the~~ applicable requirements ~~that are applicable to each of the purposes for which the room or space will be occupied~~ associated with such potential multi-purpose. Structures ~~with~~ containing multiple occupancy groups ~~occupancies or uses~~ shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically ~~provided for in this code~~ listed in this section such structure shall be classified in the ~~group that the~~ occupancy most nearly resembles, ~~according to~~ based on the fire safety and relative hazard ~~involved~~.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 andA-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

Add new text as follow:

302.2 Use designation. Occupancy groups contain subordinate uses having similar hazards and risks to building occupants. Uses include, but are not limited to, those functional designations listed within the occupancy group descriptions in this section. Certain uses require specific limitations and controls in accordance with the provisions of Chapter $ and elsewhere in this code.

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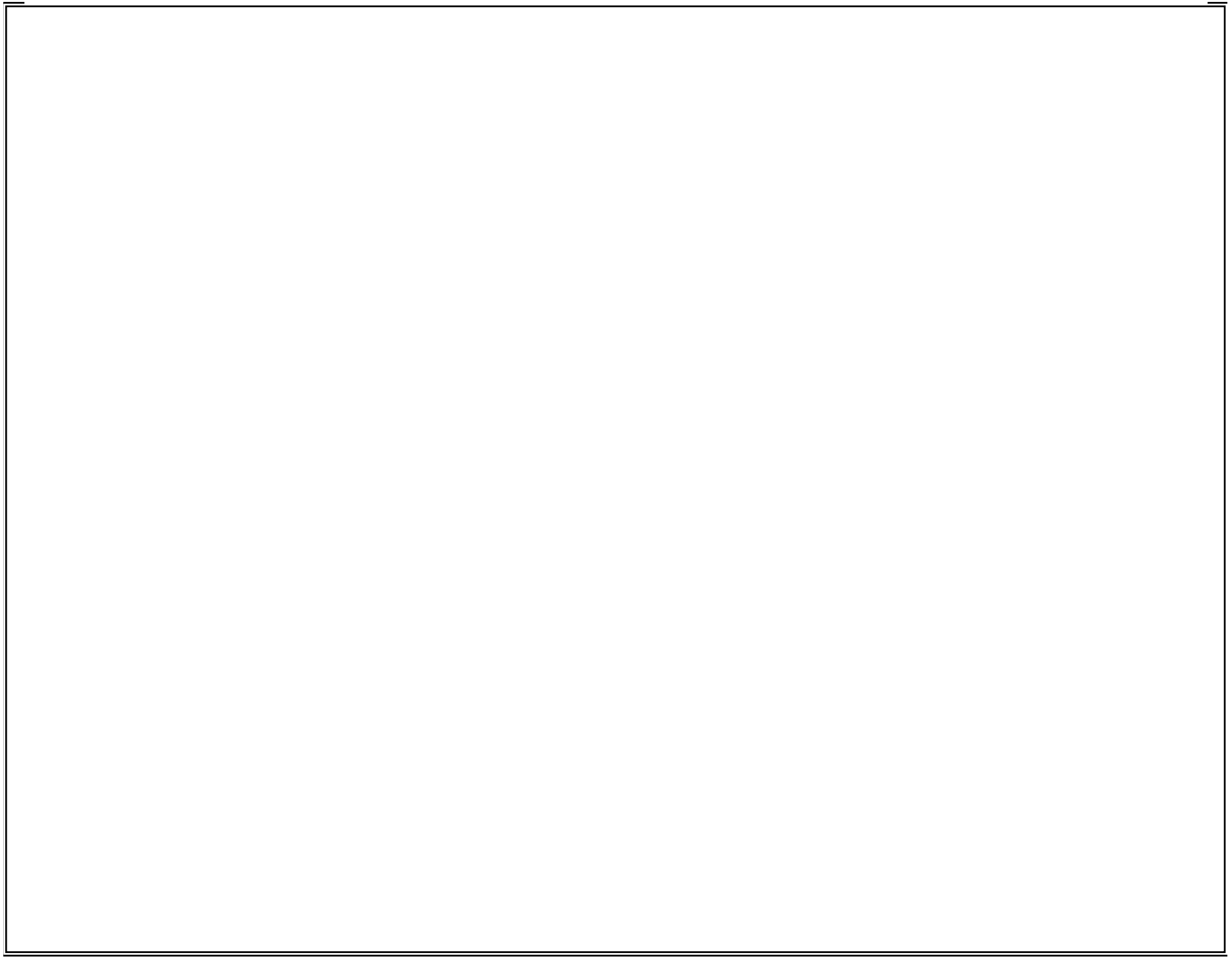

F7473

Date Submitted	11/27/2018	**Section**	307	**Proponent**	Richard Schauland
Chapter	3	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

This proposal brings the Florida Building Code, Building in line with the Florida Fire Prevention Code's referenced standard, NFPA 30B Code for the Manufacture and Storage of Aerosol Products, 2015 Edition.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There may be no impact to local entities relative to the enforcement of the code as this is an update of terminology.

Impact to building and property owners relative to cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Impact to industry relative to the cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Impact to small business relative to the cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal is about standardizing terminology between different codes and their referenced standards. It provides clarity to the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does not strengthen the Code, it standardizes terminology between different codes and their referenced standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by standardizing terminology between different codes and their referenced standards.

307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *Florida Fire Prevention Code*.

2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *Florida Fire Prevention Code*.

3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.

4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1hour *horizontal assemblies* constructed in accordance with Section 711, or both.

5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).

6. Liquor stores and distributors without bulk storage.

7. Refrigeration systems.

8. The storage or utilization of materials for agricultural purposes on the premises.

9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *Florida Building Code, Mechanical*.

Corrosive personal or household products in their original packaging used in retail display.

Commonly used corrosive building materials.

Buildings and structures occupied for aerosol product storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *Florida Fire Prevention Code*.

Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.

The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *Florida Fire Prevention Code*.

Mercantile occupancies offering for retail sale sparklers, novelties and trick noisemakers as defined at Section 791.01, *Florida Statutes*, and that are not defined as fireworks by Chapter 791, *Florida Statutes*. Storage of sparklers and other novelties or trick noisemakers as defined in Chapter 791, *Florida Statutes*, within mercantile occupancies shall be in accordance with Section 791.055, *Florida Statutes*.

[F] 307.2 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT

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Level 1 aerosol products.

Level 2 aerosol products.

Level 3 aerosol products.

AEROSOL CONTAINER.

BALED COTTON.

BALED COTTON, DENSELY PACKED. BARRICADE.

Artificial barricade.

Natural barricade.

BOILING POINT.

CLOSED SYSTEM.

COMBUSTIBLE DUST.

COMBUSTIBLE FIBERS.

COMBUSTIBLE LIQUID.
- **Class II.**
- **Class IIIA.**
- **Class IIIB.**

COMPRESSED GAS. CONTROL AREA. CORROSIVE. CRYOGENIC FLUID. DAY BOX. DEFLAGRATION. DETONATION.

DISPENSING. EXPLOSION. EXPLOSIVE.
- **High explosive.**
- **Low explosive.**

Mass-detonating explosives. UN/DOTn Class 1 explosives. Division 1.1.
- **Division 1.2.**
- **Division 1.3.**
- **Division 1.4.**
- **Division 1.5.**
- **Division 1.6.**

FIREWORKS.
- **Fireworks, 1.3G.**
- **Fireworks, 1.4G.**

FLAMMABLE GAS.

FLAMMABLE LIQUEFIED GAS.

FLAMMABLE LIQUID.
- **Class IA.**
- **Class IB.**
- **Class IC.**

FLAMMABLE MATERIAL.

FLAMMABLE SOLID.

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FLASH POINT.

HANDLING.

HAZARDOUS MATERIALS.

HEALTH HAZARD.

HIGHLY TOXIC.

INCOMPATIBLE MATERIALS.

INERT GAS.

OPEN SYSTEM.

OPERATING BUILDING.

ORGANIC PEROXIDE.
- **Class I.**
- **Class II.**
- **Class III.**
- **Class IV.**
- **Class V.**
- **Unclassified detonable.**

OXIDIZER.
- **Class 4.**
- **Class 3.**
- **Class 2.**
- **Class 1.**

OXIDIZING GAS.

PHYSICAL HAZARD.

PYROPHORIC.

PYROTECHNIC COMPOSITION.

TOXIC.

UNSTABLE (REACTIVE) MATERIAL.
- **Class 4.**
- **Class 3.**
- **Class 2.**
- **Class 1.**

WATER-REACTIVE MATERIAL.
- **Class 3.**
- **Class 2.**
- **Class 1.**

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Code Change No: F363-16

Original Proposal

Section: 202, 907.2.16 (IBC [F] 907.2.16), 5102.1, 5104.1.1, 5104.3, 5104.3.1, 5104.3.2, 5106.2.2, 5106.3, 5106.3.2, 5106.3.3, 5106.4, 5106.5, 5106.5.1, 5106.5.2, 5106.5.6, 5106.5.7, IBC [F] 307.1.1, [F] 307.2, 311.2, [F] 414.1.2.1

Proponent: Patrick McLaughlin, representing Consumer Specialty Products Association (pmclaugma@aol.com)

Revise as follows:

AEROSOL CONTAINER. A metal can or plastic container, up to a maximum size of 33.8 fl.oz. (1000 ml) or a glass ~~or plastic~~ bottle, up to a maximum size of 4 fl.oz. (118 ml), that is designed and intended to dispense an aerosol.

AEROSOL, PRODUCT A ~~product~~ combination of a container, a propellant and a material that is dispensed ~~from an aerosol container by a propellant~~.

Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, Level 2 or Level 3.

Level 1 aerosol products. Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

Level 2 aerosol products. Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

Level 3 aerosol products. Those with a total chemical heat of combustion that is greater than 13,000 Btu/lb (30 kJ/g).

AEROSOL PRODUCT WAREHOUSE. *No change to text.*

5102.1 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT.
Level 1 aerosol products.
Level 2 aerosol products.
Level 3 aerosol products.
AEROSOL CONTAINER.
AEROSOL PRODUCT WAREHOUSE.
PROPELLANT.
RETAIL DISPLAY AREA.

5104.1.1 Plastic ~~containers~~ Aerosol 1 Products. Aerosol products in plastic containers larger than 4 fluid ounces (118 ml), but not to exceed 33.8 fluid ounces (1000 ml), shall be allowed only where in accordance with this section. The commodity classification shall be Class III commodities, as defined in NFPA 13 where any of the following conditions are met:

1. Base product has no fire point where tested in accordance with ASTM D 92, and nonflammable propellant.

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2. Base product has no sustained combustion as tested in accordance with Appendix H, "Method of Testing for Sustained Combustibility," in DOTn 49 CFR Part 173, and nonflammable propellant.
3. Base product contains up to 20 percent by volume (15.8 percent by weight) of ethanol and/or isopropyl alcohol in an aqueous mix, and nonflammable propellant.
4. Base product contains 4 percent by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified, the propellant shall be nonflammable.

5104.3 Storage in general purpose warehouses. Aerosol product storage in general purpose warehouses utilized only for warehousing-type operations involving mixed commodities shall comply with Section 5104.3.1 or 5104.3.2.

5104.3.1 Nonsegregated storage. Storage consisting of solid pile, palletized or rack storage of Level 2 and 3 aerosol products not segregated into areas utilized exclusively for the storage of aerosols products shall comply with Table 5104.3.1.

5104.3.2 Segregated storage. Storage of Level 2 and 3 aerosol products segregated into areas utilized exclusively for the storage of aerosols products shall comply with Table 5104.3.2 and Sections 5104.3.2.1 and 5104.3.2.2.

5106.2.2 Display of ~~containers~~ aerosol products. Level 2 and 3 aerosol ~~containers~~ products shall not be stacked more than 6 feet (1829 mm) high from the base of the aerosol product array to the top of the aerosol product array unless the ~~containers~~ aerosol products are placed on fixed shelving or otherwise secured in an *approved* manner. Where storage or retail display is on shelves, the height of such storage or retail display to the top of aerosol ~~containers~~ products shall not exceed 8 feet (2438 mm).

5106.3 Aerosol product display and normal merchandising exceeding 8 feet (2438 mm) high. Aerosol product display and merchandising exceeding 8 feet in height shall be in accordance with Sections 5106.3.1 through 5106.3.3.

5106.3.2 Automatic sprinkler protection. Aerosol product display and merchandising areas shall be protected by an *automatic sprinkler system* based on the requirements set forth in Tables ~~6.3.2.7(a~~6.4.2.7(a) through ~~6.3.2.7(l~~6.4.2.7(l) of NFPA 30B and the following:

1. Protection shall be based on the highest level of aerosol product in the array and the packaging method of the storage located more than 6 feet (1829 mm) above the finished floor.
2. Where using the cartoned aerosol product tables of NFPA 30B, uncartoned or display-cut Level 2 and 3 ~~aerosols~~ aerosol products shall be permitted not more than 6 feet (1829 mm) above the finished floor.
3. The design area for Level 2 and 3 ~~aerosols~~ aerosol products shall extend not less than 20 feet (6096 mm) beyond the Level 2 and 3 aerosol product display and merchandising areas.
4. Where ordinary and high-temperature ceiling sprinkler systems are adjacent to each other, noncombustible draft curtains shall be installed at the interface.

5106.3.3 Separation of Level 2 and 3 aerosol product areas. Separation of Level 2 and 3 aerosol product areas shall comply with the following:

1. Level 2 and 3 aerosol product display and merchandising areas shall be separated from each other by not less than 25 feet (7620 mm). See Table 5106.2.1.
2. Level 2 and 3 aerosol Product display and merchandising areas shall be separated from flammable and *combustible liquids* storage and display areas by one or a combination of the following:
   2.1. Segregating areas from each other by horizontal distance of not less than 25 feet (7620 mm).
   2.2. Isolating areas from each other by a noncombustible partition extending not less than 18 inches (457 mm) above the merchandise.

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2.3. In accordance with Section 5106.5.

3. Where Item 2.2 is used to separate Level 2 or 3 ~~aerosols~~ aerosol products fromflammable or *combustible liquids*, and the aerosol products are located within 25 feet (7620 mm) of flammable or *combustible liquids*, the area below the noncombustible partition shall be liquid tight at the floor to prevent spilled liquids from flowing beneath the aerosol products.

4.

TABLE 5106.4
MAXIMUM STORAGE QUANTITIES FOR STORAGE AREAS ADJACENT TO RETAIL DISPLAY OF LEVEL 2 AND 3 ~~AEROSOLS~~ AEROSOL PRODUCTS

MAXIMUM NET WEIGHT PER FLOOR (pounds)			
Floor	Unseparated[a,b]	Separated	
		Storage Cabinets[b]	1-hour Occupancy Separation
Basement	Not Allowed	Not Allowed	Not Allowed
Ground	2,500	5,000	In accordance with Sections ~~6.3.4.3~~6.4.4.3 and ~~6.3.4.4~~ 6.4.4.4 of NFPA 30B
Upper	500	1,000	In accordance with Sections ~~6.3.4.3~~6.4.4.3 and ~~6.3.4.4~~6.4.4.4 of NFPA 30B

For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m^2.
a. The aggregate quantity in storage and retail display shall not exceed the quantity limits for retail display.
b. In any 50,000-square-foot area.

5106.5 Special protection design for Level 2 and 3 ~~aerosols~~ aerosol products adjacent to flammable and combustible liquids in double-row racks. The display and merchandising of Level 2 and 3 ~~aerosols~~ aerosol products adjacent to flammable and *combustible liquids* in double-row racks shall be in accordance with Sections 5106.5.1 through 5106.5.8 or Section 5106.3.3.

5106.5.1 Fire protection. Fire protection for the display and merchandising of Level 2 and 3 ~~aerosols~~ aerosol products in double-row racks shall be in accordance with Table ~~7.4.1~~ 7.5.1 and Figure ~~7.4.1~~ 7.5.1 of NFPA 30B.

5106.5.2 Cartoned aerosol products. Level 2 and 3 ~~aerosols~~ aerosol products displayed or merchandised more than 8 feet (2438 mm) above the finished floor shall be in cartons.

5106.5.6 Horizontal barriers. Horizontal barriers constructed of minimum $^3/_8$-inch-thick (10 mm) plywood or minimum 0.034-inch (0.086 mm) (No. 22 gage) sheet metal shall be provided and located in accordance with Table ~~7.4.1~~ 7.5.1 and Figure ~~7.4.1~~ 7.5.1 of NFPA 30B where in-rack sprinklers are installed.

5106.5.7 Class I, II, III, IV and plastic commodities. Class I, II, III, IV and plastic commodities located adjacent to Level 2 and 3 ~~aerosols~~ aerosol products shall be protected in accordance with NFPA 13.

907.2.16 Aerosol storage uses. Aerosol product storage rooms and general-purpose warehouses containing ~~aerosols~~ aerosol products shall be provided with an *approved* manual fire alarm system where required by this code.

2015 International Building Code

Revise as follows:

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

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1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids inmercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol product storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.

[F] 307.2 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT
Level 1 aerosol products.
Level 2 aerosol products.
Level 3 aerosol products.
AEROSOL CONTAINER.
BALED COTTON.
BALED COTTON, DENSELY PACKED.
BARRICADE.
Artificial barricade.
Natural barricade.
BOILING POINT.
CLOSED SYSTEM.
COMBUSTIBLE DUST.
COMBUSTIBLE FIBERS.
COMBUSTIBLE LIQUID.
Class II.
Class IIIA.
Class IIIB.
COMPRESSED GAS.
CONTROL AREA.
CORROSIVE.
CRYOGENIC FLUID.
DAY BOX.
DEFLAGRATION.
DETONATION.

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DISPENSING.
EXPLOSION.
EXPLOSIVE.
High explosive.
Low explosive.
Mass-detonating explosives.
UN/DOTn Class 1 explosives.
Division 1.1.
Division 1.2.
Division 1.3.
Division 1.4.
Division 1.5.
Division 1.6.
FIREWORKS.
Fireworks, 1.3G.
Fireworks, 1.4G.
FLAMMABLE GAS.
FLAMMABLE LIQUEFIED GAS.
FLAMMABLE LIQUID.
Class IA.
Class IB.
Class IC.
FLAMMABLE MATERIAL.
FLAMMABLE SOLID.
FLASH POINT.
HANDLING.
HAZARDOUS MATERIALS.
HEALTH HAZARD.
HIGHLY TOXIC.
INCOMPATIBLE MATERIALS.
INERT GAS.
OPEN SYSTEM.
OPERATING BUILDING.
ORGANIC PEROXIDE.
Class I.
Class II.
Class III.
Class IV.
Class V.
Unclassified detonable.
OXIDIZER.
Class 4.
Class 3.
Class 2.
Class 1.
OXIDIZING GAS.
PHYSICAL HAZARD.
PYROPHORIC.
PYROTECHNIC COMPOSITION.
TOXIC.
UNSTABLE (REACTIVE) MATERIAL.
Class 4.
Class 3.
Class 2.
Class 1.
WATER-REACTIVE MATERIAL.

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Class 3.
Class 2.
Class 1.

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:-
~~Aerosols~~ Aerosol products, Levels 2 and 3
Aircraft hangar (storage and repair)
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size
Grains
Horns and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)
Photo engravings
Resilient flooring
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

[F] 414.1.2.1 ~~Aerosols~~ Aerosol Products. *No change to text.*

Reason: This proposal brings the IFC/IBC terminology in line with the referenced standard, NFPA 30B Code for the Manufacture and Storage of Aerosol Products, 2015 Edition Also a code references that were in error are updated.

Cost Impact: Will not increase the cost of construction
There is no impact on the cost of construction as the proposal only updates terminology and references.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal provides correlation with NFPA 30B.

Assembly Action: **None**

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Final Action Results

F363-16 **AS**

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F7474

Date Submitted	11/27/2018	**Section**	311	**Proponent**	Richard Schauland
Chapter	3	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

This proposal brings the Florida Building Code, Building in line with the Florida Fire Prevention Code's referenced standard, NFPA 30B Code for the Manufacture and Storage of Aerosol Products, 2015 Edition

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There may be no impact to local entities relative to the enforcement of the code as this is an update of terminology.

Impact to building and property owners relative to cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Impact to industry relative to the cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Impact to small business relative to the cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal is about standardizing terminology between different codes and their referenced standards. It provides clarity to the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does not strengthen the Code, it standardizes terminology between different codes and their referenced standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by standardizing terminology between different codes and their referenced standards.

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

~~Aerosols~~ Aerosol products, Levels 2 and 3
Aircraft hangar (storage and repair)
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size Grains
Horns and combs, other than celluloid Leather
Linoleum Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)
Photo engravings
Resilient flooring
Silks
Soaps Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff Upholstery and mattresses
Wax candles

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Code Change No: F363-16

Original Proposal

Section: 202, 907.2.16 (IBC [F] 907.2.16), 5102.1, 5104.1.1, 5104.3, 5104.3.1, 5104.3.2, 5106.2.2, 5106.3, 5106.3.2, 5106.3.3, 5106.4, 5106.5, 5106.5.1, 5106.5.2, 5106.5.6, 5106.5.7, IBC [F] 307.1.1, [F] 307.2, 311.2, [F] 414.1.2.1

Proponent: Patrick McLaughlin, representing Consumer Specialty Products Association (pmclaugma@aol.com)

Revise as follows:

AEROSOL CONTAINER. A metal can or plastic container, up to a maximum size of 33.8 fl.oz. (1000 ml) or a glass ~~or plastic~~ bottle, up to a maximum size of 4 fl.oz. (118 ml), that is designed and intended to dispense an aerosol.

AEROSOL. PRODUCT A ~~product~~ combination of a container, a propellant and a material that is dispensed ~~from an aerosol container by a propellant~~.

Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, Level 2 or Level 3.

Level 1 aerosol products. Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

Level 2 aerosol products. Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

Level 3 aerosol products. Those with a total chemical heat of combustion that is greater than 13,000 Btu/lb (30 kJ/g).

AEROSOL PRODUCT WAREHOUSE. *No change to text.*

5102.1 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT.
Level 1 aerosol products.
Level 2 aerosol products.
Level 3 aerosol products.
AEROSOL CONTAINER.
AEROSOL PRODUCT WAREHOUSE.
PROPELLANT.
RETAIL DISPLAY AREA.

5104.1.1 Plastic ~~containers~~ Aerosol 1 Products. Aerosol products in plastic containers larger than 4 fluid ounces (118 ml), but not to exceed 33.8 fluid ounces (1000 ml), shall be allowed only where in accordance with this section. The commodity classification shall be Class III commodities, as defined in NFPA 13 where any of the following conditions are met:

1. Base product has no fire point where tested in accordance with ASTM D 92, and nonflammable propellant.

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2. Base product has no sustained combustion as tested in accordance with Appendix H, "Method of Testing for Sustained Combustibility," in DOTn 49 CFR Part 173, and nonflammable propellant.
3. Base product contains up to 20 percent by volume (15.8 percent by weight) of ethanol and/or isopropyl alcohol in an aqueous mix, and nonflammable propellant.
4. Base product contains 4 percent by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified, the propellant shall be nonflammable.

5104.3 Storage in general purpose warehouses. Aerosol product storage in general purpose warehouses utilized only for warehousing-type operations involving mixed commodities shall comply with Section 5104.3.1 or 5104.3.2.

5104.3.1 Nonsegregated storage. Storage consisting of solid pile, palletized or rack storage of Level 2 and 3 aerosol products not segregated into areas utilized exclusively for the storage of aerosols products shall comply with Table 5104.3.1.

5104.3.2 Segregated storage. Storage of Level 2 and 3 aerosol products segregated into areas utilized exclusively for the storage of aerosols products shall comply with Table 5104.3.2 and Sections 5104.3.2.1 and 5104.3.2.2.

5106.2.2 Display of ~~containers~~ aerosol products. Level 2 and 3 aerosol ~~containers~~ products shall not be stacked more than 6 feet (1829 mm) high from the base of the aerosol product array to the top of the aerosol product array unless the ~~containers~~ aerosol products are placed on fixed shelving or otherwise secured in an *approved* manner. Where storage or retail display is on shelves, the height of such storage or retail display to the top of aerosol ~~containers~~ products shall not exceed 8 feet (2438 mm).

5106.3 Aerosol product display and normal merchandising exceeding 8 feet (2438 mm) high. Aerosol product display and merchandising exceeding 8 feet in height shall be in accordance with Sections 5106.3.1 through 5106.3.3.

5106.3.2 Automatic sprinkler protection. Aerosol product display and merchandising areas shall be protected by an *automatic sprinkler system* based on the requirements set forth in Tables ~~6.3.2.7(a~~6.4.2.7(a) through ~~6.3.2.7(l~~6.4.2.7(l) of NFPA 30B and the following:

1. Protection shall be based on the highest level of aerosol product in the array and the packaging method of the storage located more than 6 feet (1829 mm) above the finished floor.
2. Where using the cartoned aerosol product tables of NFPA 30B, uncartoned or display-cut Level 2 and 3 ~~aerosols~~ aerosol products shall be permitted not more than 6 feet (1829 mm) above the finished floor.
3. The design area for Level 2 and 3 ~~aerosols~~ aerosol products shall extend not less than 20 feet (6096 mm) beyond the Level 2 and 3 aerosol product display and merchandising areas.
4. Where ordinary and high-temperature ceiling sprinkler systems are adjacent to each other, noncombustible draft curtains shall be installed at the interface.

5106.3.3 Separation of Level 2 and 3 aerosol product areas. Separation of Level 2 and 3 aerosol product areas shall comply with the following:

1. Level 2 and 3 aerosol product display and merchandising areas shall be separated from each other by not less than 25 feet (7620 mm). See Table 5106.2.1.
2. Level 2 and 3 aerosol Product display and merchandising areas shall be separated from flammable and *combustible liquids* storage and display areas by one or a combination of the following:
   2.1. Segregating areas from each other by horizontal distance of not less than 25 feet (7620 mm).
   2.2. Isolating areas from each other by a noncombustible partition extending not less than 18 inches (457 mm) above the merchandise.

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2.3. In accordance with Section 5106.5.

3. Where Item 2.2 is used to separate Level 2 or 3 ~~aerosols~~ aerosol products fromflammable or *combustible liquids*, and the aerosol products are located within 25 feet (7620 mm) of flammable or *combustible liquids*, the area below the noncombustible partition shall be liquid tight at the floor to prevent spilled liquids from flowing beneath the aerosol products.

4.

TABLE 5106.4
MAXIMUM STORAGE QUANTITIES FOR STORAGE AREAS ADJACENT TO RETAIL DISPLAY OF LEVEL 2 AND 3 ~~AEROSOLS~~ AEROSOL PRODUCTS

MAXIMUM NET WEIGHT PER FLOOR (pounds)			
Floor	Unseparated[a,b]	Separated	
		Storage Cabinets[b]	1-hour Occupancy Separation
Basement	Not Allowed	Not Allowed	Not Allowed
Ground	2,500	5,000	In accordance with Sections ~~6.3.4.3~~6.4.4.3 and ~~6.3.4.4~~ 6.4.4.4 of NFPA 30B
Upper	500	1,000	In accordance with Sections ~~6.3.4.3~~6.4.4.3 and ~~6.3.4.4~~6.4.4.4 of NFPA 30B

For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m^2.
a. The aggregate quantity in storage and retail display shall not exceed the quantity limits for retail display.
b. In any 50,000-square-foot area.

5106.5 Special protection design for Level 2 and 3 ~~aerosols~~ aerosol products adjacent to flammable and combustible liquids in double-row racks. The display and merchandising of Level 2 and 3 ~~aerosols~~ aerosol products adjacent to flammable and *combustible liquids* in double-row racks shall be in accordance with Sections 5106.5.1 through 5106.5.8 or Section 5106.3.3.

5106.5.1 Fire protection. Fire protection for the display and merchandising of Level 2 and 3 ~~aerosols~~ aerosol products in double-row racks shall be in accordance with Table ~~7.4.1~~ 7.5.1 and Figure ~~7.4.1~~ 7.5.1 of NFPA 30B.

5106.5.2 Cartoned aerosol products. Level 2 and 3 ~~aerosols~~ aerosol products displayed or merchandised more than 8 feet (2438 mm) above the finished floor shall be in cartons.

5106.5.6 Horizontal barriers. Horizontal barriers constructed of minimum $^3/_8$-inch-thick (10 mm) plywood or minimum 0.034-inch (0.086 mm) (No. 22 gage) sheet metal shall be provided and located in accordance with Table ~~7.4.1~~ 7.5.1 and Figure ~~7.4.1~~ 7.5.1 of NFPA 30B where in-rack sprinklers are installed.

5106.5.7 Class I, II, III, IV and plastic commodities. Class I, II, III, IV and plastic commodities located adjacent to Level 2 and 3 ~~aerosols~~ aerosol products shall be protected in accordance with NFPA 13.

907.2.16 Aerosol storage uses. Aerosol product storage rooms and general-purpose warehouses containing ~~aerosols~~ aerosol products shall be provided with an *approved* manual fire alarm system where required by this code.

2015 International Building Code

Revise as follows:

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

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1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids inmercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol product storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.

[F] 307.2 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT
Level 1 aerosol products.
Level 2 aerosol products.
Level 3 aerosol products.
AEROSOL CONTAINER.
BALED COTTON.
BALED COTTON, DENSELY PACKED.
BARRICADE.
Artificial barricade.
Natural barricade.
BOILING POINT.
CLOSED SYSTEM.
COMBUSTIBLE DUST.
COMBUSTIBLE FIBERS.
COMBUSTIBLE LIQUID.
Class II.
Class IIIA.
Class IIIB.
COMPRESSED GAS.
CONTROL AREA.
CORROSIVE.
CRYOGENIC FLUID.
DAY BOX.
DEFLAGRATION.
DETONATION.

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DISPENSING.
EXPLOSION.
EXPLOSIVE.
High explosive.
Low explosive.
Mass-detonating explosives.
UN/DOTn Class 1 explosives.
Division 1.1.
Division 1.2.
Division 1.3.
Division 1.4.
Division 1.5.
Division 1.6.
FIREWORKS.
Fireworks, 1.3G.
Fireworks, 1.4G.
FLAMMABLE GAS.
FLAMMABLE LIQUEFIED GAS.
FLAMMABLE LIQUID.
Class IA.
Class IB.
Class IC.
FLAMMABLE MATERIAL.
FLAMMABLE SOLID.
FLASH POINT.
HANDLING.
HAZARDOUS MATERIALS.
HEALTH HAZARD.
HIGHLY TOXIC.
INCOMPATIBLE MATERIALS.
INERT GAS.
OPEN SYSTEM.
OPERATING BUILDING.
ORGANIC PEROXIDE.
Class I.
Class II.
Class III.
Class IV.
Class V.
Unclassified detonable.
OXIDIZER.
Class 4.
Class 3.
Class 2.
Class 1.
OXIDIZING GAS.
PHYSICAL HAZARD.
PYROPHORIC.
PYROTECHNIC COMPOSITION.
TOXIC.
UNSTABLE (REACTIVE) MATERIAL.
Class 4.
Class 3.
Class 2.
Class 1.
WATER-REACTIVE MATERIAL.

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Class 3.
Class 2.
Class 1.

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:-
~~Aerosols~~ Aerosol products, Levels 2 and 3
Aircraft hangar (storage and repair)
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size
Grains
Horns and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)
Photo engravings
Resilient flooring
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

[F] 414.1.2.1 ~~Aerosols~~ Aerosol Products. *No change to text.*

Reason: This proposal brings the IFC/IBC terminology in line with the referenced standard, NFPA 30B Code for the Manufacture and Storage of Aerosol Products, 2015 Edition Also a code references that were in error are updated.

Cost Impact: Will not increase the cost of construction
There is no impact on the cost of construction as the proposal only updates terminology and references.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal provides correlation with NFPA 30B.

Assembly Action: **None**

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Final Action Results

F363-16 **AS**

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F7552

Date Submitted	11/29/2018	**Section**	302.1	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

503.1.4 - new

Summary of Modification

As roof areas are being used for other activities and functions, addresses these uses and related issues

Rationale

Many buildings are being built or altered to create an occupied roof. The code is not clear as to the requirements for these "spaces". Chapter 10 takes care of the means of egress requirements. But, the rest of the code does not address these issues. Some areas are used as gathering spaces, dining areas, swimming pools, etc. The question has come up as to whether these uses are an "occupancy". Some jurisdictions classify them as occupancies and others do not. However, the fact is that the code is an occupancy driven document. Therefore, we decided to use similar language in Section 302.1 combined with the language in Section 1004.5. An occupied roof would be classified to an occupancy that it most resembles. For example, a roof off of a private office would be classified as a Group B occupancy. However a roof above a restaurant would be classified as a Group A-2 occupancy.

We have also provided language stating that the height and area requirements do not apply to occupied roofs. We conducted a survey of several building departments and code consultants and found that most respondents did not require an occupied roof to comply with the height and area provisions of the code. We are also not aware of any issues with the use of a roof as an occupied space.

This proposal provides users of the code some guidance and clarification on how to apply the provisions to an occupied roof.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assists and clarifies requirements tying it back to their use, and clearly illustrating requirements for design, plan review and inspection

Impact to building and property owners relative to cost of compliance with code

Lowers impact due to uncertainty for the use planned and makes it easier for designer to focus on clear requirements

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Allows for clearer requirements for such uses on roof area making is safer for users of the area

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code due to clear definitions and uses local adopted classifications for design and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not and provides better focus and enforcement criteria

Revise as follows:

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved. Yards, patios, courts, occupied roofs and similar outdoor areas accessible to and usable by the building occupants shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazardinvolved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 andA-5.
2. Business (see Section 304): GroupB.
3. Educational (see Section 305): GroupE.
4. Factory and Industrial (see Section 306): Groups F-1 andF-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 andH-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 andI-4.
7. Mercantile (see Section 309): GroupM.
8. Residential (see Section 310): Groups R-1, R-2, R-3 andR-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): GroupU.

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F7556

Date Submitted	12/5/2018	**Section**	302.1	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

503.1.4 - new

Summary of Modification

As roof areas are being used for other activities and functions, addresses these uses and related issues

Rationale

Many buildings are being built or altered to create an occupied roof. The code is not clear as to the requirements for these "spaces". Chapter 10 takes care of the means of egress requirements. But, the rest of the code does not address these issues. Some areas are used as gathering spaces, dining areas, swimming pools, etc. The question has come up as to whether these uses are an "occupancy". Some jurisdictions classify them as occupancies and others do not. However, the fact is that the code is an occupancy driven document. Therefore, we decided to use similar language in Section 302.1 combined with the language in Section 1004.5. An occupied roof would be classified to an occupancy that it most resembles. For example, a roof off of a private office would be classified as a Group B occupancy. However a roof above a restaurant would be classified as a Group A-2 occupancy.

We have also provided language stating that the height and area requirements do not apply to occupied roofs. We conducted a survey of several building departments and code consultants and found that most respondents did not require an occupied roof to comply with the height and area provisions of the code. We are also not aware of any issues with the use of a roof as an occupied space.

This proposal provides users of the code some guidance and clarification on how to apply the provisions to an occupied roof.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assists and clarifies requirements tying it back to their use, and clearly illustrating requirements for design, plan review and inspection

Impact to building and property owners relative to cost of compliance with code

Lowers impact due to uncertainty for the use planned and makes it easier for designer to focus on clear requirements

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Allows for clearer requirements for such uses on roof area making is safer for users of the area

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code due to clear definitions and uses local adopted classifications for design and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not and provides better focus and enforcement criteria

Revise as follows:

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved. Yards, patios, courts, occupied roofs and similar outdoor areas accessible to and usable by the building occupants shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazardinvolved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

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F7557

Date Submitted	11/29/2018	**Section**	310.4	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Provides clarification on uses for R-2 and R-3 based on size (number of occupants).

Rationale

The proposal provides a needed clarification of the uses which can be either an R-2 or an R-3 based on size (number of occupants.). The modification removes text which is redundant with the charging language of Section 310.4. Since both R-2 and R-3 are required to be provided within automatic sprinkler system, occupants in both occupancies are afforded that protection.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies enforcement and requirements

Impact to building and property owners relative to cost of compliance with code

Minimal

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves protection of occupants safety and welfare

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by clarifying requirements

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not by actually improving effectiveness

Modify as follows:

310.4Residential Group R-2.

Residential Group R-2 occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

- Apartment houses
- *Boarding houses* (nontransient) ~~with more than 16 occupants~~
- *Congregate living facilities* (nontransient) with more than 16 occupants
- Convents
- *Dormitories*
- Fraternities and sororities
- Hotels (nontransient)
- *Live/work units*
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7557_TextOfModification_1.png

F7559

Date Submitted	11/29/2018	**Section**	310.5	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

310.5.2

Summary of Modification

This proposal further refines the added language by inserting "owner occupied" which is a qualifier already in the Code; by clarifying that the lodging use is of a "transient" nature consistent with other Group R-3 use language.

Rationale

This proposal further refines the added language by inserting "owner occupied" which is a qualifier already in the Code; by clarifying that the lodging use is of a "transient" nature consistent with other Group R-3 use language. It further ties in the 10 or fewer occupant load criteria which is also intended for consistency with the current Board house language, a lodging house is a form of a boarding house.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies language allowing for better enforcement of requirements

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety for occupants by clarifying requirements in select uses and occupant loads

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code enforcement and safety aspects for occupants

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Improves Code effectiveness

Revise as follows:

310.5 Residential Group R-3.

Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Buildings that do not contain more than two *dwelling units*
- *Boarding houses* (nontransient) with 16 or fewer occupants
- *Boarding houses* (*transient*) with 10 or fewer occupants
- Care facilities that provide accommodations for five or fewer persons receiving care
- *Congregate living facilities* (nontransient) with 16 or fewer occupants
- *Congregate living facilities* (*transient*) with 10 or fewer occupants
- *Owner occupied Lodging houses* with five or fewer *guest rooms and 10 or fewer occupants*

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7559_TextOfModification_1.png

Date Submitted	11/29/2018	**Section**	310.5.2	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments **No** **Alternate Language** **No**

Related Modifications

310.5

Summary of Modification

This proposal further refines the added language by inserting "owner occupied" which is a qualifier already in the Code; by clarifying that the lodging use is of a "transient" nature consistent with other Group R-3 use language.

Rationale

This proposal further refines the added language by inserting "owner occupied" which is a qualifier already in the Code; by clarifying that the lodging use is of a "transient" nature consistent with other Group R-3 use language. It further ties in the 10 or fewer occupant load criteria which is also intended for consistency with the current Board house language, a lodging house is a form of a boarding house.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies language allowing for better enforcement of requirements

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety for occupants by clarifying requirements in select uses and occupant loads

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code enforcement and safety aspects for occupants

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Improves Code effectiveness

Revise as follows:

310.5.2 Lodging houses.

Owner-occupied *lodging houses* with five or fewer *guest rooms* and 10 or fewer occupants shall be permitted to be constructed in accordance with the *Florida Building Code, Residential*.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7560_TextOfModification_1.png

F7561

Date Submitted	11/29/2018	**Section**	311.1.1	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The subject of storage rooms has been discussed since the first edition of the Code. The original code considered storage rooms as incidental uses. This will better define that space's usage.

Rationale

The subject of storage rooms has been discussed since the first edition of the Code. The original code considered storage rooms as incidental uses and required them to be separated from the remainder of the building or be provided with a fire extinguishing system. The original requirement was based on health care uses, but was not introduced that way. That provision was deleted from the Incidental Use Table because it was causing problems with the design of buildings and there was no technical justification to maintain the requirement.

The previous Code edition was revised with the above section limiting the area to 100 square feet once again. However, it does not tell the user what to do if it exceeds 100 square feet. There was also no technical justification provided to support the 100 square foot limit. This proposal deletes the square footage limit as well as deleting the last sentence that did not give any direction as to what occupancy was to be used to determine the maximum aggregate area.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies section and eliminates possible confusion for designer and plan reviewers

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies requirements and removes confusion as to technical requirements allowing for better definition in accordance to use

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies requirements and allows for consideration of what is being stored there and impact on life safety requirements

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Mod 7561

Revise as follows:

311.1.1 Accessory storage spaces. A room or space used for storage purposes that is ~~less than 100 square feet (9.3 m2) in area and~~ accessory to another occupancy shall be classified as part of that occupancy. ~~The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2.~~

F7564

Date Submitted	11/29/2018	**Section**	312.1	**Proponent**	Ann Russo5
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This addition identifies the placement of communication equipment structures less than 1,500 sq ft gross into Group U.

Rationale

This addition identifies the placement of communication equipment structures less than 1,500 square feet gross into Group U. The selection of 1,500 square feet is a typical structure size that would be visited infrequently by only authorized and knowledgeable personnel. The characteristics of "Structures housing accessory equipment that is part of a utility or communications system are often classified as Group U occupancies when there is no intent that these structures be occupied except for servicing and maintaining the equipment with the structure. A pump house for a water or sewage system or equipment building at the base of a telecommunication tower is an example of such buildings". This proposal memorializes the communication equipment structures under the U group and continues to require conformance to basis fire and life hazard while better identifying the occupancy and activities intended for the structure. The thousands of existing and future structures of this occupancy range from a small subterranean room, on-grade equipment housing or small communications structure visited only for equipment installation and maintenance will benefit from this clarification.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies usage and enforcement

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarification will have small and positive impact on safety and general welfare

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code via clarification

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings
Aircraft hangars, accessory to a one or two-family residence (see Section 412.5)

Barns
Carports
Communication equipment structures with a *gross floor area* of less than 1,500 square feet Fences more than 6 feet (1829 mm) in height
Grain silos, accessory to a residential occupancy

Greenhouses
Livestock shelters

Private garages

Retaining walls

Sheds
Stables

Tanks

Towers

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F8173

Date Submitted	12/14/2018	**Section**	302.1	**Proponent**	Joseph Belcher for Bison
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

503.1.4

Summary of Modification

Adds provisions for occupied roofs.

Rationale

(Note: This is extracted from the ICC proponent's reason. For the full text see the Uploaded Support File.)

Commenter's Reason: There were several proposed changes to deal with occupied roofs submitted for this code cycle. All of them were disapproved by the General Committee. The proponents of all of those proposals have come together to develop one public comment to address this important issue. Building departments are seeing more and more roofs being occupied. The purpose of this public comment is to provide some direction to the code official in dealing with these uses. The code defines a story as "that portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above." While other proposals have been submitted to address the question whether or not an occupied roof would add to the number of stories, it is the opinion of the submitters that the code already addresses when a portion of the building is considered a story as indicated in the definition of Story. An uncovered roof deck is clearly not a story, because there is no floor or roof above.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No impact.

Impact to industry relative to the cost of compliance with code

No impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Occupied roofs are becoming more common and the propose will help to assure the health, safety, and welfare of members of the public using such facilities.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change to the code was will improve the code by helping to assure the safety of the public using such facilities.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change does not degrade the effectiveness of the code.

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved. Occupied roofs shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved and shall comply with Section503.1.4.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4, and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I -4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3, and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

503.1.4 Occupied roofs A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section506.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Section 907.5 is provided in the area of the occupied roof.
2. Assembly occupancies shall be permitted on roofs of open parking garages of Type I or Type II construction, in accordance with the exception to Section903.2.1.6.

Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches above the surface of the occupied roof.

Exception: Penthouses constructed in accordance with Section 1510.2 and towers, domes, spires, and cupolas constructed in accordance with Section 1510.5.

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Commenter's Reason: There were several proposed changes to deal with occupied roofs submitted for this code cycle. All of them were disapproved by the General Committee. The proponents of all of those proposals have come together to develop one public comment to address this important issue. Building departments are seeing more and more roofs being occupied. The purpose of this public comment is to provide some direction to the code official in dealing with these uses. The code defines a story as "that portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above." While other proposals have been submitted to address the question whether or not an occupied roof would add to the number of stories, it is the opinion of the submitters that the code already addresses when a portion of the building is considered a story as indicated in the definition of Story. An uncovered roof deck is clearly not a story, because there is no floor or roof above.

The first portion of the change (Section 302.1) is to clarify that occupied roofs are required to be classified as an occupancy. The codes are so occupancy driven that you cannot determine what is needed when an roof is occupied unless you determine an occupancy classification. As an example, if a roof is used for gathering of people, it would be classified as a Group A-3. If it was a roof where patrons were drinking and dining, you would classify it as a Group A-2. An occupied roof outside a private office would be classified as a Group B. It is based on the use and the relative hazard of the use just like any other space in a building.

The second portion (Section 503.1.4) provides direction as to where the occupancies can be located. If the building is not provided with fire sprinklers, the use cannot be located on the roof unless it is permitted on the story directly below. For example, an occupied roof used for gathering of people on top of an office building of Type VB Construction without fire sprinklers would be limited to the roof of a one-story building. However, under the first exception, if the building is provide with fire sprinklers, there is no limitation as to where the occupied roof is permitted to be located. It is intended that the fire sprinklers will provide protection from the story below the occupied roof. The second exception in 503.1.4 correlates this section with the exception to Section 903.2.1.6, which allows assembly occupancies on the roof of Type I or II open parking garages without sprinklers on all the floors below.

During the discussions of the public comment, some contributors expressed the concern that if an uncovered occupied roof had walls or screens surrounding it, for all intents and purposes, the occupied roof area functions as a story from a firefighting perspective, even though it technically does not meet the definition of a story. The second paragraph of Section 503.1.4 is intended to reduce the height of any barriers or obstacles around the occupied roof area, so it does not function as a story. The exception is intended to allow abutting penthouses, towers, domes, spires, and cupolas that comply with Section 1510 to exceed the 48" height limit. Note that other rooftop structures in Section 1510 such as mechanical equipment screens and "bulkheads" are intentionally not included in the exception, since they were the source of the concern. The specified rooftop structures are generally limited in extent as related to the occupied roof, so their walls were not judged to be a major obstacle.

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All other requirements in the code regarding occupied roofs will not change. They will still need a means of egress and an accessible route. The only purpose of this proposal is to clarify whether they have an occupancy classification and where they can be located.

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F7368

Date Submitted	11/20/2018	**Section**	405.8	**Proponent**	Bryan Holland
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification changes fire pumps for underground buildings to an emergency power load from a standby power load.

Rationale

In the 2015 IBC, Section 403.4.8 (High-rise buildings), the redundant power source requirements for electrically powered fire pumps was changed from stand-by power to emergency power. This proposed change applies the same requirement to Underground Buildings as it is possible for a single building to qualify as both an underground building and a high-rise building. As such, these provisions should be consistent between the two requirement sets to avoid potential design conflicts.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners unless the cost is passed on to the consumer by the builder.

Impact to industry relative to the cost of compliance with code

This proposed modification will increase the cost of compliance to industry to meet the more stringent requirements for an emergency system verses a legally required standby system.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by harmonizing power load requirements in high-rise buildings with those in underground buildings along with coordinating the FBC-B with the FFPC.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by ensuring fire pump loads are on emergency systems which are more robust and effective verses standby systems.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

F] 405.8 Standby and emergency power. A standby power system complying with Section 2702 shall be provided for the standby power loads specified in Section 405.8.1. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 405.8.2.

[F] 405.8.1 Standby power loads. The following loads are classified as standby power loads:

1. Smoke control system.

2. Ventilation and automatic fire detection equipment for smokeproof enclosures.

~~3. Fire pumps.~~

~~4.~~ 3. Elevators, as required in Section 3003.

[F] 405.8.2 Emergency power loads. The following loads are classified as emergency power loads:

1. Emergency voice/alarm communications systems.

2. Fire alarm systems.

3. Automatic fire detection systems.

4. Elevator car lighting.

5. Means of egress and exit sign illumination as required by Chapter 10.

6. Fire pumps.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7368_TextOfModification_1.png

F7370

Date Submitted	11/20/2018	**Section**	412.6.7	**Proponent**	Bryan Holland
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds electrical classification criteria to the rules for aircraft paint hangers.

Rationale

This proposed modification provides some needed guidance for classifying the hazardous location within an aircraft paint hanger. these requirements will harmonize the FBC-B with the FFPC and NFPA 70.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by providing needed guidance on the classification of hazardous location at and around aircraft paint hangers.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

[F] 412.6.7 Electrical. Electrical equipment and devices within the aircraft paint hangar shall comply with NFPA 70.

[F] 412.6.7.1 Class I, Division I hazardous locations. The area within 10 feet (3048 mm) horizontally from aircraft surfaces and from the floor to 10 feet (3048 mm) above the aircraft surface shall be classified as a Class I, Division I location.

[F] 412.6.7.2 Class I, Division 2 hazardous locations. The area horizontally from aircraft surfaces between 10 feet (3048 mm) and 30 feet (9144 mm) and from the floor to 30 feet (9144 mm) above the aircraft surface shall be classified as a Class I, Division 2 location.

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F7390

Date Submitted	11/21/2018	**Section**	412.6.3	**Proponent**	Ann Russo2
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

412.6.4

Summary of Modification

Aligns the aircraft paint hangar spray equipment cleaning and storage provisions with the fundamental system of classifying hazardous areas in accordance with Section 307.1 and result in more consistent application of Florida Fire Prevention Code and Florida Building Code provisions.

Rationale

The current spray equipment cleaning operations provisions in Section 412.6.3 that such operations be conducted in a liquid use, dispensing and mixing room and storage provisions in Section 412.6.4 requiring a liquid storage room are fairly absolute. The Section 412.6.3 specific requirement overlooks two important aspects. First, flammable or combustible liquids may not be used in the cleaning operation. Many new solvents in use today are not flammable nor combustible and many companies are utilizing these products in an effort to avoid environmental restrictions. Secondly, spray equipment can often be cleaned using minimal amounts of flammable or combustible solvents not in excess of maximum allowable quantities. In either event, the requirement for spray equipment cleaning operations to be conducted in a liquid use, dispensing and mixing room is unduly restrictive and unnecessary.
Similarly, Section 412.6.4 assumes storage of flammable liquids in amounts in excess of the maximum allowable quantities per control area in Table 307.1(1) which may or may not be the case.
Approval of this proposal would align the aircraft paint hangar spray equipment cleaning and storage provisions with the fundamental system of classifying hazardous areas in accordance with Section 307.1 and result in more consistent application of Florida Fire Prevention Code and Florida Building Code provisions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no impact to local entity relative to enforcement of code.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. Approval would reduce the cost of construction for facilities where quantities of flammable and combustible liquids less than the maximum allowable quantity per control are used or stored.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction. Approval would reduce the cost of construction for facilities where quantities of flammable and combustible liquids less than the maximum allowable quantity per control are used or stored.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. Approval would reduce the cost of construction for facilities where quantities of flammable and combustible liquids less than the maximum allowable quantity per control are used or stored.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Reduces the cost of construction for facilities where quantities of flammable and combustible liquids less than the maximum allowable quantity per control are used or stored.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Aligns the aircraft paint hangar spray equipment cleaning and storage provisions with the fundamental system of classifying hazardous areas in accordance with Section 307.1 and results in more consistent application of Florida Fire Prevention Code and Florida Building Code provisions.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no effect on construction materials, products, or methods of construction.

Does not degrade the effectiveness of the code

Will not degrade the effective of the code, but eases restrictions where such are unnecessary for the use and occupancy of the building.

[F] 412.6.3 **Operations**. Only those flammable liquids necessary for painting operations shall be permitted in quantities less than the maximum allowable quantities per *control area* in Table 307.1(1). Spray equipment cleaning operations exceeding the maximum allowable quantities per *control area* in Table 307.1(1) shall be conducted in a liquid use, dispensing and mixing room.

[F] 412.6.4 **Storage**. Storage of flammable or combustible liquids exceeding the maximum allowable quantities per *control area* in Table 307.1(1) shall be in a liquid storage room.

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F7476

Date Submitted	11/27/2018	**Section**	414	**Proponent**	Richard Schauland
Chapter	4	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Modifications 7473 and 7474

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

This proposal brings the Florida Building Code, Building in line with the Florida Fire Prevention Code's referenced standard, NFPA 30B Code for the Manufacture and Storage of Aerosol Products, 2015 Edition.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There may be no impact to local entities relative to the enforcement of the code as this is an update of terminology.

Impact to building and property owners relative to cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Impact to industry relative to the cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Impact to small business relative to the cost of compliance with code

This proposal will not increase the cost of construction as this is an update on terminology.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal is about standardizing terminology between different codes and their referenced standards. It provides clarity to the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does not strengthen the Code, it standardizes terminology between different codes and their referenced standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by standardizing terminology between different codes and their referenced standards.

[F] 414.1.2.1 ~~Aerosols~~ Aerosol Products. *No change to text.*

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Code Change No: F363-16

Original Proposal

Section: 202, 907.2.16 (IBC [F] 907.2.16), 5102.1, 5104.1.1, 5104.3, 5104.3.1, 5104.3.2, 5106.2.2, 5106.3, 5106.3.2, 5106.3.3, 5106.4, 5106.5, 5106.5.1, 5106.5.2, 5106.5.6, 5106.5.7, IBC [F] 307.1.1, [F] 307.2, 311.2, [F] 414.1.2.1

Proponent: Patrick McLaughlin, representing Consumer Specialty Products Association (pmclaugma@aol.com)

Revise as follows:

AEROSOL CONTAINER. A metal can or plastic container, up to a maximum size of 33.8 fl.oz. (1000 ml) or a glass ~~or plastic~~ bottle, up to a maximum size of 4 fl.oz. (118 ml), that is designed and intended to dispense an aerosol.

AEROSOL, PRODUCT A ~~product~~ combination of a container, a propellant and a material that is dispensed ~~from an aerosol container by a propellant~~.

Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, Level 2 or Level 3.

Level 1 aerosol products. Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

Level 2 aerosol products. Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

Level 3 aerosol products. Those with a total chemical heat of combustion that is greater than 13,000 Btu/lb (30 kJ/g).

AEROSOL PRODUCT WAREHOUSE. *No change to text.*

5102.1 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT.
Level 1 aerosol products.
Level 2 aerosol products.
Level 3 aerosol products.
AEROSOL CONTAINER.
AEROSOL PRODUCT WAREHOUSE.
PROPELLANT.
RETAIL DISPLAY AREA.

5104.1.1 Plastic ~~containers~~ Aerosol 1 Products. Aerosol products in plastic containers larger than 4 fluid ounces (118 ml), but not to exceed 33.8 fluid ounces (1000 ml), shall be allowed only where in accordance with this section. The commodity classification shall be Class III commodities, as defined in NFPA 13 where any of the following conditions are met:

1. Base product has no fire point where tested in accordance with ASTM D 92, and nonflammable propellant.

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2. Base product has no sustained combustion as tested in accordance with Appendix H, "Method of Testing for Sustained Combustibility," in DOTn 49 CFR Part 173, and nonflammable propellant.
3. Base product contains up to 20 percent by volume (15.8 percent by weight) of ethanol and/or isopropyl alcohol in an aqueous mix, and nonflammable propellant.
4. Base product contains 4 percent by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified, the propellant shall be nonflammable.

5104.3 Storage in general purpose warehouses. Aerosol product storage in general purpose warehouses utilized only for warehousing-type operations involving mixed commodities shall comply with Section 5104.3.1 or 5104.3.2.

5104.3.1 Nonsegregated storage. Storage consisting of solid pile, palletized or rack storage of Level 2 and 3 aerosol products not segregated into areas utilized exclusively for the storage of aerosols products shall comply with Table 5104.3.1.

5104.3.2 Segregated storage. Storage of Level 2 and 3 aerosol products segregated into areas utilized exclusively for the storage of aerosols products shall comply with Table 5104.3.2 and Sections 5104.3.2.1 and 5104.3.2.2.

5106.2.2 Display of ~~containers~~ aerosol products. Level 2 and 3 aerosol ~~containers~~ products shall not be stacked more than 6 feet (1829 mm) high from the base of the aerosol product array to the top of the aerosol product array unless the ~~containers~~ aerosol products are placed on fixed shelving or otherwise secured in an *approved* manner. Where storage or retail display is on shelves, the height of such storage or retail display to the top of aerosol ~~containers~~ products shall not exceed 8 feet (2438 mm).

5106.3 Aerosol product display and normal merchandising exceeding 8 feet (2438 mm) high. Aerosol product display and merchandising exceeding 8 feet in height shall be in accordance with Sections 5106.3.1 through 5106.3.3.

5106.3.2 Automatic sprinkler protection. Aerosol product display and merchandising areas shall be protected by an *automatic sprinkler system* based on the requirements set forth in Tables ~~6.3.2.7(a~~6.4.2.7(a) through ~~6.3.2.7(l~~6.4.2.7(l) of NFPA 30B and the following:

1. Protection shall be based on the highest level of aerosol product in the array and the packaging method of the storage located more than 6 feet (1829 mm) above the finished floor.
2. Where using the cartoned aerosol product tables of NFPA 30B, uncartoned or display-cut Level 2 and 3 ~~aerosols~~ aerosol products shall be permitted not more than 6 feet (1829 mm) above the finished floor.
3. The design area for Level 2 and 3 ~~aerosols~~ aerosol products shall extend not less than 20 feet (6096 mm) beyond the Level 2 and 3 aerosol product display and merchandising areas.
4. Where ordinary and high-temperature ceiling sprinkler systems are adjacent to each other, noncombustible draft curtains shall be installed at the interface.

5106.3.3 Separation of Level 2 and 3 aerosol product areas. Separation of Level 2 and 3 aerosol product areas shall comply with the following:

1. Level 2 and 3 aerosol product display and merchandising areas shall be separated from each other by not less than 25 feet (7620 mm). See Table 5106.2.1.
2. Level 2 and 3 aerosol Product display and merchandising areas shall be separated from flammable and *combustible liquids* storage and display areas by one or a combination of the following:
   2.1. Segregating areas from each other by horizontal distance of not less than 25 feet (7620 mm).
   2.2. Isolating areas from each other by a noncombustible partition extending not less than 18 inches (457 mm) above the merchandise.

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2.3. In accordance with Section 5106.5.

3. Where Item 2.2 is used to separate Level 2 or 3 ~~aerosols~~ aerosol products fromflammable or *combustible liquids*, and the aerosol products are located within 25 feet (7620 mm) of flammable or *combustible liquids*, the area below the noncombustible partition shall be liquid tight at the floor to prevent spilled liquids from flowing beneath the aerosol products.

4.

TABLE 5106.4
MAXIMUM STORAGE QUANTITIES FOR STORAGE AREAS ADJACENT TO RETAIL DISPLAY OF LEVEL 2 AND 3 ~~AEROSOLS~~ AEROSOL PRODUCTS

MAXIMUM NET WEIGHT PER FLOOR (pounds)			
Floor	Unseparated[a,b]	Separated	
		Storage Cabinets[b]	1-hour Occupancy Separation
Basement	Not Allowed	Not Allowed	Not Allowed
Ground	2,500	5,000	In accordance with Sections ~~6.3.4.3~~6.4.4.3 and ~~6.3.4.4~~ 6.4.4.4 of NFPA 30B
Upper	500	1,000	In accordance with Sections ~~6.3.4.3~~6.4.4.3 and ~~6.3.4.4~~6.4.4.4 of NFPA 30B

For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m^2.
a. The aggregate quantity in storage and retail display shall not exceed the quantity limits for retail display.
b. In any 50,000-square-foot area.

5106.5 Special protection design for Level 2 and 3 ~~aerosols~~ aerosol products adjacent to flammable and combustible liquids in double-row racks. The display and merchandising of Level 2 and 3 ~~aerosols~~ aerosol products adjacent to flammable and *combustible liquids* in double-row racks shall be in accordance with Sections 5106.5.1 through 5106.5.8 or Section 5106.3.3.

5106.5.1 Fire protection. Fire protection for the display and merchandising of Level 2 and 3 ~~aerosols~~ aerosol products in double-row racks shall be in accordance with Table ~~7.4.1~~ 7.5.1 and Figure ~~7.4.1~~ 7.5.1 of NFPA 30B.

5106.5.2 Cartoned aerosol products. Level 2 and 3 ~~aerosols~~ aerosol products displayed or merchandised more than 8 feet (2438 mm) above the finished floor shall be in cartons.

5106.5.6 Horizontal barriers. Horizontal barriers constructed of minimum $^3/_8$-inch-thick (10 mm) plywood or minimum 0.034-inch (0.086 mm) (No. 22 gage) sheet metal shall be provided and located in accordance with Table ~~7.4.1~~ 7.5.1 and Figure ~~7.4.1~~ 7.5.1 of NFPA 30B where in-rack sprinklers are installed.

5106.5.7 Class I, II, III, IV and plastic commodities. Class I, II, III, IV and plastic commodities located adjacent to Level 2 and 3 ~~aerosols~~ aerosol products shall be protected in accordance with NFPA 13.

907.2.16 Aerosol storage uses. Aerosol product storage rooms and general-purpose warehouses containing ~~aerosols~~ aerosol products shall be provided with an *approved* manual fire alarm system where required by this code.

2015 International Building Code

Revise as follows:

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

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1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids inmercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol product storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.

[F] 307.2 Definitions. The following terms are defined in Chapter 2:

AEROSOL PRODUCT
Level 1 aerosol products.
Level 2 aerosol products.
Level 3 aerosol products.
AEROSOL CONTAINER.
BALED COTTON.
BALED COTTON, DENSELY PACKED.
BARRICADE.
Artificial barricade.
Natural barricade.
BOILING POINT.
CLOSED SYSTEM.
COMBUSTIBLE DUST.
COMBUSTIBLE FIBERS.
COMBUSTIBLE LIQUID.
Class II.
Class IIIA.
Class IIIB.
COMPRESSED GAS.
CONTROL AREA.
CORROSIVE.
CRYOGENIC FLUID.
DAY BOX.
DEFLAGRATION.
DETONATION.

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DISPENSING.
EXPLOSION.
EXPLOSIVE.
High explosive.
Low explosive.
Mass-detonating explosives.
UN/DOTn Class 1 explosives.
Division 1.1.
Division 1.2.
Division 1.3.
Division 1.4.
Division 1.5.
Division 1.6.
FIREWORKS.
Fireworks, 1.3G.
Fireworks, 1.4G.
FLAMMABLE GAS.
FLAMMABLE LIQUEFIED GAS.
FLAMMABLE LIQUID.
Class IA.
Class IB.
Class IC.
FLAMMABLE MATERIAL.
FLAMMABLE SOLID.
FLASH POINT.
HANDLING.
HAZARDOUS MATERIALS.
HEALTH HAZARD.
HIGHLY TOXIC.
INCOMPATIBLE MATERIALS.
INERT GAS.
OPEN SYSTEM.
OPERATING BUILDING.
ORGANIC PEROXIDE.
Class I.
Class II.
Class III.
Class IV.
Class V.
Unclassified detonable.
OXIDIZER.
Class 4.
Class 3.
Class 2.
Class 1.
OXIDIZING GAS.
PHYSICAL HAZARD.
PYROPHORIC.
PYROTECHNIC COMPOSITION.
TOXIC.
UNSTABLE (REACTIVE) MATERIAL.
Class 4.
Class 3.
Class 2.
Class 1.
WATER-REACTIVE MATERIAL.

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Class 3.
Class 2.
Class 1.

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:-
~~Aerosols~~ Aerosol products, Levels 2 and 3
Aircraft hangar (storage and repair)
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size
Grains
Horns and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)
Photo engravings
Resilient flooring
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

[F] 414.1.2.1 ~~Aerosols~~ Aerosol Products. *No change to text.*

Reason: This proposal brings the IFC/IBC terminology in line with the referenced standard, NFPA 30B Code for the Manufacture and Storage of Aerosol Products, 2015 Edition Also a code references that were in error are updated.

Cost Impact: Will not increase the cost of construction
There is no impact on the cost of construction as the proposal only updates terminology and references.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal provides correlation with NFPA 30B.

Assembly Action: **None**

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Final Action Results

F363-16 **AS**

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F7511

Date Submitted	12/14/2018	**Section**	406.8.3	**Proponent**	Tim Earl
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7511 (Section 406.8.3)7546 (Section 424.2)
7547 (Sections 804.2 and 804.3)
7548 (Section 35)

Summary of Modification

This change adds ASTM E648 as an option to NFPA 253, since they are equivalent tests. This is the same thing we do for Steiner Tunnel testing, where the code (throughout) requires testing to ASTM E84 or UL 723.

Rationale

ASTM E648 is technically equivalent to NFPA 253. Since the flooring industry routinely references ASTM E648, this proposal will remove confusion when test reports reference the ASTM test instead of the NFPA test. This proposal also correlates with the 2018 IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to building and property owners relative to cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to industry relative to the cost of compliance with code

This change may result in a small costs savings to industry, since those who submit ASTM E648 test reports currently have to either ask the lab to provide another test report referencing NFPA 253, or have a code consultant explain to the code official that they are equivalent tests.

Impact to small business relative to the cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This section is about the fire performance of flooring products, which is critical to life safety. The change itself simply improves the usability of the code by recognizing two equivalent tests instead of one.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This change is material neutral, as flooring products are tested in an identical manner using ASTM E648 or NFPA 253. The only difference is what is listed on the test report.

Does not degrade the effectiveness of the code

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

406.8.3Floor surface.

Repair garage floors shall be of concrete or similar noncombustible and nonabsorbent materials.

Exception: Slip-resistant, nonabsorbent, *interior floor finishes* having a critical radiant flux not more than 0.45 W/cm^2, as determined by ASTM E648 or NFPA 253, shall be permitted.

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F7546

Date Submitted	12/14/2018	**Section**	424.2	**Proponent**	Tim Earl
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7511 (Section 406.8.3)
7547 (Sections 804.2 and 804.3)
7548 (Section 35)

Summary of Modification

This change adds ASTM E648 as an option to NFPA 253, since they are equivalent tests. This is the same thing we do for Steiner Tunnel testing, where the code (throughout) requires testing to ASTM E84 or UL 723.

Rationale

ASTM E648 is technically equivalent to NFPA 253. Since the flooring industry routinely references ASTM E648, this proposal will remove confusion when test reports reference the ASTM test instead of the NFPA test. This proposal also correlates with the 2018 IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to building and property owners relative to cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to industry relative to the cost of compliance with code

This change may result in a small costs savings to industry, since those who submit ASTM E648 test reports currently have to either ask the lab to provide another test report referencing NFPA 253, or have a code consultant explain to the code official that they are equivalent tests.

Impact to small business relative to the cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This section is about the fire performance of flooring products, which is critical to life safety. The change itself simply improves the usability of the code by recognizing two equivalent tests instead of one.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This change is material neutral, as flooring products are tested in an identical manner using ASTM E648 or NFPA 253. The only difference is what is listed on the test report.

Does not degrade the effectiveness of the code

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

424.2 Materials. Children's play structures shall be constructed of noncombustible materials or of combustible materials that
comply with the following:
1. Fire-retardant-treated wood complying with Section 2303.2.
2. Light-transmitting plastics complying with Section 2606.
3. Foam plastics (including the pipe foam used in softcontained play equipment structures) having a maximum heatrelease
rate not greater than 100 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289, using the 20 kW ignition source.
4. Aluminum composite material (ACM) meeting the requirements of Class A interior finish in accordance with Chapter 8 when tested as an assembly in the maximum thickness intended for use.
5. Textiles and films complying with the fire propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
6. Plastic materials used to construct rigid components of soft-contained play equipment structures (such as tubes, windows, panels, junction boxes, pipes, slides and decks) exhibiting a peak rate of heat release not exceeding 400 kW/ m2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation at a thickness of 6 mm.
7. Ball pool balls, used in soft-contained play equipment structures, having a maximum heat-release rate not greater than 100 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289, using the 20 kW ignition source. The minimum specimen test size shall be 36 inches by 36 inches (914 mm by 914 mm) by an average of 21 inches (533 mm) deep, and the balls shall be held in a box constructed of galvanized steel poultry netting wire mesh.
8. Foam plastics shall be covered by a fabric, coating or film meeting the fire propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
9. The floor covering placed under the children's play structure shall exhibit a Class I interior floor finish classification, as described in Section 804, when tested in accordance with ASTM E648 or NFPA 253.

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F7562

Date Submitted	11/29/2018	**Section**	401.1	**Proponent**	Ann Russo1
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The purpose of this code change is to simply formalize these terms and explain their relationship. This will assist code practitioners in properly establishing applicable code requirements and improve uniformity and continuity in the identification of appropriate provisions.

Rationale

Properly classifying the purpose of a given building or structure is the very important first step in the design or analysis process. The reason for this is that the various designations account for the inherent hazards and risks typically associated with the intended purpose. Based on those hazards and risks, appropriate limitations and controls are assigned to the building or structure. The Florida Building Code uses several specific terms to identify the purpose of the building or structure. Those are: occupancy classification, use and function. Occupancy classification and use are often confused and function is misunderstood.
This proposal will inform users of the FBC of building classification and assist all concerned in the proper communication of applicable code requirements.
This is related to proposed modification # 7464

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will provide clarification between the terms of 'use' and 'occupancy'. Too often they are treated to be the same when they are really distinct terms. The proposal clarifies the difference.
This proposal is related to modification # 7464

Impact to building and property owners relative to cost of compliance with code

Will not increase cost of compliance with code.

Impact to industry relative to the cost of compliance with code

Will not increase cost of compliance with code.

Impact to small business relative to the cost of compliance with code

Will not increase cost of compliance with code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proposal simply provide clarification of current requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Proposal simply provide clarification of current requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Proposal simply provide clarification of current requirements.

Does not degrade the effectiveness of the code

Proposal simply provide clarification of current requirements.

Revise as follows:

CHAPTER 4
SPECIAL DETAILED REQUIREMENTS BASED ON ~~USE~~ OCCUPANCY AND ~~OCCUPANCY~~ USE

401.1 Detailed ~~use~~ occupancy and ~~occupancy~~ use requirements. In addition to the occupancy and construction requirements in this code, the provisions of this chapter apply to the ~~special uses~~ occupancies and ~~occupancies~~ uses described herein.

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Date Submitted	11/29/2018	**Section**	402.8.6.1	**Proponent**	Ann Russo5
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments **No**

Alternate Language **No**

Related Modifications

Summary of Modification

The purpose of this proposal is to point the user to all of the code requirements for exit passageways.

Rationale

The purpose of this proposal is to point the user to all of the code requirements for exit passageways. The 1 hour fire- resistance rating is maintained, for openings Section 1024.5 points the user to Section 716 and applying that portion of the code maintains the requirement for the 1 hour rated fire doors, (see Table 716.5), and maintains the requirement for the smoke activated closure, (see Section 716.5.9.3, Item 3).

There has been cases of confusion in that a user looks at Sections 402.8.6.1 and 402.8.7 and interprets that these are the only sections needed to be complied with for an exit passageway in this occupancy. For example, the application of Section 1024.6 for penetration limitations. With the suggest change the level of protection is unchanged and application of the exit passageway requirements are clarified.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

It eliminates conflicting interpretations by design professionals and clarifies requirements

Impact to building and property owners relative to cost of compliance with code

Eliminates possible conflicts allowing design professionals to properly specify requirements needed

Impact to industry relative to the cost of compliance with code

None as it eliminates conflicts and possible confusion

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement of life safety requirements for protection of occupants in case of emergency egress

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code with clarification as to requirements and eliminates possible contradictory requirements

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

No, it improves Code effectiveness

Revise as follows:

402.8.6.1 Exit passageways. Where *exit passageways* provide a secondary *means of egress* from a tenant space~~, doorways to~~ the ~~*exit passageway*~~ exit passageways shall be ~~protected by 1-hour *fire door assemblies* that are self- or automatic-closing by smoke detection~~ constructed in accordance with Section ~~716.5.9.3~~1024.

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F7618

Date Submitted	12/10/2018	**Section**	424.1	**Proponent**	Marcelo Hirschler
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Definition of SOFT CONTAINED PLAY EQUIPMENT STRUCTURE proposed to be added

Summary of Modification

Clarifies that both height and area limitations apply

Rationale

The intent of this code section is to protect children from exposure to fire in large play structures. Code officials have expressed a concern that there have been instances where suggested structures were proposed where one of the dimensions (width or height) was just slightly smaller than the cut off and the other one vastly exceeded the cut off. With the language requiring both dimensions to exceed the limits this may be interpreted that, as long as as one dimension does not exceed the limits the other dimension has no limits. That is not safe. The change should clarify that there is a limitation on each dimension.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Makes the code more restrictive by clarifying that both height and area apply separately.

Impact to building and property owners relative to cost of compliance with code

Potential increase in cost but clarifies code intent.

Impact to industry relative to the cost of compliance with code

Potential increase in cost but clarifies code intent.

Impact to small business relative to the cost of compliance with code

Potential increase in cost but clarifies code intent.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves fire safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate

Does not degrade the effectiveness of the code

Does not degrade the code

424.1 Children's play structures. Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in
height ~~and~~ or 150 square feet (14 m^2) in area shall comply with Sections 424.2 through 424.5.

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F7826

Date Submitted	12/10/2018	**Section**	406.7.2	**Proponent**	Paul Coats
Chapter	4	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522 and 7553, and others making the same adjustments to terminology.

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~ heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. 1.Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~ heavy timber complying with Section 2304.11;
2. 2.Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smoke developed index of 450 or less when tested in the form intended for use in accordance with ASTM E84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929; or
3. 3.Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F7992

Date Submitted	12/12/2018	**Section**	414.2.4	**Proponent**	Paul Coats
Chapter	4	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Adds Type IV construction in requirements for fire resistance of floors serving control areas.

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. The interior construction of Types IIIA and VA construction can be built of the exact same material as type IV construction so long that it is calculated or tested to be one hour fire resistance rated. Type IV construction is preferable for hazardous occupancies to Type IIIA or Type VA construction from an allowable area standpoint in the current code due to performance. Since Type IIIA and Type VA can be built out of exactly the same material as long as it is one hour, and since the control area is separated from the balance of the building by one hour construction, there is no reason to exclude type IV from this exception from two hour fire resistance rating of the floor assembly and supporting construction for the control area in buildings three stories or less and fully sprinklered with a NFPA 13 sprinkler system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Adds flexibility to the code for this provision.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact since it adds an option.

Impact to industry relative to the cost of compliance with code

No cost-related impact since it adds an option.

Impact to small business relative to the cost of compliance with code

No cost-related impact since it adds an option.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Adds an option to current provisions.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by adding an option to current provisions.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

[F]414.2.4 Fire-resistance-rating requirements.

The required *fire-resistance rating* for *fire barriers* shall be in accordance with Table 414.2.2. The floor assembly of the *control area* and the construction supporting the floor of the *control area* shall have a *fire-resistance rating* of not less than 2 hours.

Exception: The floor assembly of the *control area* and the construction supporting the floor of the *control area* are allowed to be 1-hour fire-resistance rated in buildings of Types IIA, IIIA, IV and VA construction, provided that both of the following conditions exist:

1. 1.The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1; and
2. 2.The building is three or fewer *stories above grade plane*.

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F355-16

5003.8.3.4; IBC [F] 414.2.4

Proponent : Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Fire Code

5003.8.3.4 (IBC [F]414.2.4) Fire-resistance-rating requirements. The required *fire-resistance rating*for *fire barriers*shall be in accordance with Table 5003.8.3.2. The floor assembly of the *control area*and the construction supporting the floor of the *control area*shall have a *fire-resistance rating*of not less than 2 hours.

Exception: The floor assembly of the *control area*and the construction supporting the floor of the *control area*is allowed to be 1-hour *fire-resistance*rated in buildings of Type IIA, IIIA, IV and VA construction, provided that both of the following conditions exist:

1. The building is equipped throughout with an *automatic sprinkler system*in accordance with Section 903.3.1.1.
2. The building is three stories or less above grade plane.

Reason: The interior construction of Types IIIA and VA construction, can be built of the exact same material as type IV construction so long that it is calculated or tested to be one hour fire resistance rated. Type IV construction is preferable for hazardous occupancies to Type IIIA or Type VA construction from an allowable area standpoint in the current code due to performance. Since Type IIIA and Type VA can be built out of exactly the same material as long as it is one hour, and since the control area is separated from the balance of the building by one hour construction, there is no reason to exclude type IV from this exception from two hour fire resistance rating of the floor assembly and supporting construction for the control area in buildings three stories or less and fully sprinklered with a NFPA 13 sprinkler system.

Cost Impact: Will not increase the cost of construction
This code proposal provides more options to the existing exception and will not increase cost.

F355-16 : 5003.8.3.4-RICHARDSON12356

Final Action: AS (Approved as Submitted

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F355-16

Committee Action: **Approved as Submitted**

Committee Reason: The addition of Type IV construction to the exception to the rating of floors for control areas was felt to be a reasonable approach and would be consistent with the protection provided for other construction types.

Assembly Action: **None**

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F7134

Date Submitted	10/18/2018	**Section**	503.1.4	**Proponent**	Steve Thomas
Chapter	5	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

302.1

Summary of Modification

This change provides language outlining how the height and area requirements of the code are applied to an occupied roof. It sets limits on the location of an occupied roof and clarifies the requirements.

Rationale

This language provides direction as to where the occupied roofs classified as occupancies can be located. If the building is not provided with fire sprinklers, the use cannot be located on the roof unless it is permitted on the story directly below. For example, an occupied roof used for gathering of people on top of an office building of Type VB Construction without fire sprinklers would be limited to the roof of a one-story building. However, under the first exception, if the building is provide with fire sprinklers, there is no limitation as to where the occupied roof is permitted to be located. It is intended that the fire sprinklers will provide protection from the story below the occupied roof. The second exception in 503.1.4 correlates this section with the exception to Section 903.2.1.6, which allows assembly occupancies on the roof of Type I or II open parking garages without sprinklers on all the floors below.

The fire service has a concern that if an uncovered occupied roof had walls or screens surrounding it, for all intents and purposes, the occupied roof area functions as a story from a firefighting perspective, even though it technically does not meet the definition of a story. The second paragraph of Section 503.1.4 is intended to reduce the height of any barriers or obstacles around the occupied roof area, so it does not function as a story. The exception is intended to allow abutting penthouses, towers, domes, spires, and cupolas that comply with Section 1510 to exceed the 48" height limit. Note that other rooftop structures in Section 1510 such as mechanical equipment screens and "bulkheads" are intentionally not included in the exception, since they were the source of the concern. The specified rooftop structures are generally limited in extent as related to the occupied roof, so their walls were not judged to be a major obstacle.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact. This is just a clarification of the code requirements to assist the local entity

Impact to building and property owners relative to cost of compliance with code

No impact. This is just a clarification that will actually assist the owner by knowing how to address occupied roofs.

Impact to industry relative to the cost of compliance with code

No impact. This is just a clarification

Impact to small business relative to the cost of compliance with code

There is no impact to small business. This language just clarifies whether an occupied roof is a story or part of the building area. Small businesses are already doing this type of work and this will provide consistent language on how to handle occupied roofs.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

By regulating the location of an occupied roof , the health, safety and welfare provisions of the code can be applied equally. Right now there is no language to clarify how to evaluate an occupied roof. Therefore, code officials are forced to make things up.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposal strengthens the code by providing language on how occupied roofs are evaluated from a height and area standpoint so the code can be applied equally.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This has no impact on materials, etc. This just a clarification of the code.

Does not degrade the effectiveness of the code

This helps with the effectiveness of the code by clarifying how an occupied roof is evaluated.

503.1.4 Occupied roofs.
A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section 506. An occupied roof shall not be included in the building height or number of stories as regulated by Section 504 provided the penthouses and other enclosed roof structures comply with Section 1510.

Exceptions:

1.The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinker system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification where required by Section 907.2 is provided in the area of the occupied roof.

2.Assembly occupancies shall be permitted on roofs of open parking spaces of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

503.1.4.1 Enclosures over occupied roof areas.
Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.

Exception: Elevator lobbies, stairway enclosures, penthouses constructed in accordance with Section 1510.2; and towers, domes, spires and cupolas constructed in accordance with Section 1510.5.

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F7506

Date Submitted	11/28/2018	**Section**	509.5	**Proponent**	Ann Russo5
Chapter	5	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The provisions for electrical rooms found in the National Electrical Code (NEC) can be an unwelcome surprise if not found early in the design process. Construction aspects to the NEC requirements should be located in the Code to eliminate this issue.

Rationale

By adding this under Chapter 5, the requirements under the NEC are properly included in the Building Code thus giving guidance to the design professionals as well as construction professionals on those requirements eliminating issues between the two

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None as clarifies requirements

Impact to building and property owners relative to cost of compliance with code

None as clarifies requirements

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Increases recognition of safety and better coordinates requirements

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Increases recognition of safety and better coordinates requirements making compliance easier

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No, it improves coordination

Mod 7506

ADD Following

509.5 Electrical room construction. Rooms containing transformers shall be in accordance with Section 1010.1.10 and with thissection.

1. Where Table 509 only specifies separation without protection for rooms containing electrical transformers, the room shall be in accordance with thefollowing:
   1.1. Ventilation openings in surrounding building exterior walls or roof/ceiling construction shall be provided with an open area of not less than 3 square inches for each kVA of transformer capacity or not less than 1 square foot, whichever is greater. Ventilation openings shall be in accordance with Sections 705.8 and 716.5 and protected with screens, grating or louvers. The ventilation openings shall be located in accordance with one of thefollowing:
   1.1.1. Provide 100 percent of ventilation openings near the ceiling of the electrical room;or
   1.1.2. Provide half of the ventilation openings at the floor and the balance of the openings near the ceiling of the electrical room.
   1.2. Electrical rooms shall be provided at the exterior of the building to allow natural ventilation in accordance with Item1, or shall be provided with mechanical ventilation located and sized to effectively control the transformer full load losses and limit the temperature rise in accordance with the transformerrating.
   1.3. Where the room is located at slab on grade condition, a concrete slab not less than 4 inches thick shall be provided.
   1.4. Doors from the electrical room shall swing in the direction of egress travel away from the electrical room. Doors shall be self-closing to a latched and locked position and shall be provided with panic hardware.
   1.5. Pipes and ducts, other than those that service the electrical room, shall not pass through an electrical room.
2. Where table 509 specifies both separation and protection for rooms containing electrical transformers, the room shall be in accordance with Item 1 and the following:
   2.1. The room shall be separated by an enclosure constructed of concrete or similar materials providing not less than one-hour fire-resistance- rated construction and protected as specified in Table 509, or without protection the enclosure shall be increased to 3 hour fire-resistance-rated construction. In either case, opening protectives shall be provided in accordance with Sections 705.8 and716.5.

F7555

Date Submitted	11/29/2018	**Section**	503.1	**Proponent**	Ann Russo5
Chapter	5	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

302.1

Summary of Modification

As roof areas are being used for other activities and functions, addresses these uses and related issues

Rationale

Many buildings are being built or altered to create an occupied roof. The code is not clear as to the requirements for these "spaces". Chapter 10 takes care of the means of egress requirements. But, the rest of the code does not address these issues. Some areas are used as gathering spaces, dining areas, swimming pools, etc. The question has come up as to whether these uses are an "occupancy". Some jurisdictions classify them as occupancies and others do not. However, the fact is that the code is an occupancy driven document. Therefore, we decided to use similar language in Section 302.1 combined with the language in Section 1004.5. An occupied roof would be classified to an occupancy that it most resembles. For example, a roof off of a private office would be classified as a Group B occupancy. However a roof above a restaurant would be classified as a Group A-2 occupancy.

We have also provided language stating that the height and area requirements do not apply to occupied roofs. We conducted a survey of several building departments and code consultants and found that most respondents did not require an occupied roof to comply with the height and area provisions of the code. We are also not aware of any issues with the use of a roof as an occupied space.

This proposal provides users of the code some guidance and clarification on how to apply the provisions to an occupied roof.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assists and clarifies requirements tying it back to their use, and clearly illustrating requirements for design, plan review and inspection. Addresses issue of height restriction

Impact to building and property owners relative to cost of compliance with code

Lowers impact due to uncertainty for the use planned and makes it easier for designer to focus on clear requirements. Does not penalize for height issues

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Allows for clearer requirements for such uses on roof area making is safer for users of the area, and does not penalize for impact on height issues

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code due to clear definitions and uses local adopted classifications for design and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not and clarifies that height element has no effect on roof use

Does not degrade the effectiveness of the code

Does not and provides better focus and enforcement criteria

Add new text as follows:

503.1.4 Occupied roofs Occupied roofs are not subject to the building height, number of stories and building area limitations of Sections 504 and 506.

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F7459

Date Submitted	11/26/2018	**Section**	601	**Proponent**	Bonnie Manley
Chapter	6	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarifies application of Table 601 Footnote b.

Rationale

This proposal has been submitted to address multiple interpretations of Table 601 Footnote "b." We have found that although the code membership has supported the exemption for fire protection of structural members 20 feet or more above any floor immediately below that framing, we have found that other entities are interpreting that the primary structural frame is not included in this exemption.

This proposal is designed to address that impact by modifying two aspects of Table 601. The first; to add the reference to footnote "b" to the primary structural frame row of fire resistance requirements, and two; to modify Footnote "b" by adding the phases "in roof construction" and "primary structural frame members" to the current list of items now shown.

Multiple attempts have been made in the past to restrict the original intent, however they have all been disapproved. The most recent was code change G139-12. The code development committee's response stated: "The proposal was disapproved as it is the intent of the footnote to allow all structural members to be unprotected. This proposal would only exempt the secondary members." The committee's disapproval of G139-12 was further upheld by the ICC membership during the Final Action Hearings in Portland, OR, October 2012. The public comment to G139-12 challenging the committee's decision was also disapproved by ICC membership.

Further, the reference of structural members applying to all structural members is further reinforced by the definition of "Primary Structural Frame" in Section 202, where it states in the charging sentence the following: "Primary structural frame. The primary structural frame shall include all of the following structural members…."

Proposal G167-15 was approved for inclusion as submitted in the 2018 IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No change in cost is anticipated.

Impact to building and property owners relative to cost of compliance with code

No change in cost is anticipated.

Impact to industry relative to the cost of compliance with code

No change in cost is anticipated.

Impact to small business relative to the cost of compliance with code

No change in cost is anticipated.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes, it does.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, it does.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not.

Does not degrade the effectiveness of the code

No, it does not.

TABLE 601

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a,b]	2[a,b]	1[b]	0	1[b]	0	HT	1[b]	0
Bearing walls Exterior[e, f] Interior	3[3a]	2[2a]	1	0	2	2	2/HT	1	0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[b]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

1. a.Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
2. b.Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
3. c.In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
4. d.Not less than the fire-resistance rating required by other sections of this code.
5. e.Not less than the fire-resistance rating based on fire separation distance (see Table 602).
6. f.Not less than the fire-resistance rating as referenced in Section 704.10.

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F7522

Date Submitted	11/29/2018	**Section**	602.4	**Proponent**	Paul Coats
Chapter	6	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

#7553 for Section 2304.11 is a duplicate of this proposal which takes provisions from Chapter 6 and moves them to Chapter 23, necessitating review by both the Fire Safety and Structural TACs.

Summary of Modification

This proposed modification takes the details for heavy timber construction out of Chapter 6 and consolidates them in Chapter 23.

Rationale

The proposed modifications were approved by the ICC membership and appear in the 2018 IBC. They do not change the technical requirements for heavy timber but improve their usability. The changes shown reflect ICC code changes G179-15 (primarily), G178-15, and G175-18, which were all Approved as Submitted by the General Code Development Committee and subsequently the ICC membership (files are attached). The IBC General Code Development Committee made the following statement in the 2015 ICC Report of Committee Action Hearing, for G179-15: "The proposal provides necessary consolidation and eliminates duplicative text between Chapters 6 and 23. The revised table is sorely needed to make help the users of the code. Moving the table to Chapter 23 is totally appropriate. The was comfort that with a detailed comparision this is a good clean up with no technical changes. As with any major revision, there remained concerns that all pieces have been maintained and there might be some unintended consequences. The new organization provides better logic for the requirements." See the uploaded file for the complete rationale for G179-15, the primary code change, and a table comparing the locations of sections in the current code and what is proposed. Reason statements for G175 and G178 can also be seen in the uploaded support files for the proposed text.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Enforcement of provisions may be easier.

Impact to building and property owners relative to cost of compliance with code

There is no cost impact.

Impact to industry relative to the cost of compliance with code

There is not cost impact.

Impact to small business relative to the cost of compliance with code

There is no cost impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This reorganization and consolidation of heavy timber provisions in one location will promote better compliance and better enforcement and therefore affects the safety and welfare of the general public positively.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This reorganization and consolidation of heavy timber provisions in one location will improve the usability and application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate in any way.

Does not degrade the effectiveness of the code

Retains the current effectiveness of the code and improves it.

Mod 7522

602.4 Type IV. Type IV construction ~~(Heavy Timber, HT)~~ is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, ~~or~~ laminated wood, heavy timber (HT) or structural composite lumber (SCL) without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL), and cross-laminated timber and ~~The~~ details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Interior walls and partitions not less than 1-hour fire-resistance rating or heavy timber complying with Section 2304.11.2.2 shall be permitted. ~~Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.~~

602.4.1 Fire-retardant-treated wood in exterior walls. *Fire-retardant-treated wood* framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less.

602.4.2 Cross-laminated timber in exterior walls. *Cross-laminated timber* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than 15/32 inch (12 mm) thick;
2. *Gypsum board* not less than 1/2 inch (12.7 mm) thick; or
3. A noncombustible material.

~~**602.4.3 Columns.** Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an *approved* manner. Protection in accordance with Section 704.2 is not required.~~

~~**602.4.4 Floor framing.** Wood beams and girders shall be of sawn or glued-laminated timber and shall be not less than 6 inches (152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn or glued-laminated timber arches, which spring from the floor line and support floor loads, shall be not less than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall have members of not less than 8 inches (203 mm) nominal in any dimension.~~

~~**602.4.5 Roof framing.** Wood-frame or glued-laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued-laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by *approved* automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.~~

~~**602.4.9**~~ **602.4.3 Exterior structural members.** Where a horizontal separation of 20 feet(6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with 2304.11 shall be permitted to be used externally.

2304.11 Heavy timber construction. Where a structure ~~or~~ , portion thereof ~~is~~,or individual structural elements are required to be of ~~Type IV construction~~ heavy timber by ~~other~~ provisions of this code, the building elements therein shall comply with the applicable provisions of Sections 2304.11.1 through ~~2304.11.5~~ 2304.11.4.Minimum dimensions ofheavytimber shall comply as applicable in Table2304.11 based on roofs or floors supported and the configuration of each structural element, or as applicable in Sections2304.11.2 through 2304.11.4.

2304.11.1 ~~Columns~~Details of heavy timber structural members. ~~Columns~~
Heavy timber structural members shall be ~~continuous or superimposed throughout all stories by means of reinforced concrete or metal caps~~ detailed and constructed inaccordance with ~~brackets, or shall be connected by properly designed steel or iron caps,with pintles and base plates,or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other *approved* methods.~~Sections 2304.11.1.1 through 2304.11.1.3.

2304.11.1.1~~Column connections~~Columns. Minimum dimensions of columns shall be in accordance with Table
2304.11.Columns shall be continuous or superimposed throughout all stories and connected in an *approved* manner. Girders and beams at column connections shall be closely fitted around columns and adjoining ends shall be cross tied to each other,or intertied by caps or ties,to transfer horizontal loads across joints. Wood bolsters shall not be placed on tops of columns unless the columns support roof loads only.Where traditional heavy timber detailing is used, connections shall be permitted to be by means of reinforced concrete ormetal caps with brackets, or shall be connected by properly designed steel or iron caps, with pintles and base plates, or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other approved methods.

~~2304.11.2~~ 2304.11.1.2 Floor framing. Minimum dimensions of floor framing shall be in accordance with Table 2304.11. *Approved* wall plate boxes or hangers shall be provided where wood beams, girders or trusses rest on masonry or concrete walls. Where intermediate beams are used to support a floor, they shall rest on top of girders, or shall be supported by ~~ledgers or blocks securely fastened to the sides of the girders, or they shall be supported by~~ an *approved* metal hanger into which the ends of the beams shall be closely fitted.Where traditional heavy timber detailing is used, these connections shall be permitted to be supported by ledgers or blocks securely fastened to the sides of the girders.

~~2304.11.3~~ 2304.11.1.3 Roof framing. Minimum dimensions of roof framing shall be in accordance with Table 2304.11. Every roof girder and at least every alternate roof beam shall be anchored to its supporting member; ~~and every monitor and every sawtooth construction shall be anchored to the main roof construction. Such anchors shall consist o fsteel or iron bolts of sufficient strength~~ to resist ~~vertical uplift of the roof.~~forces as required in Chapter 16.

~~602.4.8~~ 2304.11.2 Partitions and walls. Partitions and walls shall comply with Section ~~602.4.8.1~~2304.11.2.1 or
~~602.4.8.2~~ 2304.11.2.2.

~~602.4.8.2~~ 2304.11.2.1Exterior walls. Exterior walls shall permitted to be ~~of one of the following:~~

~~1. Noncombustible materials.~~
1. ~~Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~
   ~~1.1. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.~~
   1.1.*Cross-laminated timber*~~complying with~~ meeting the requirements of Section ~~602.4.2~~ 2303.1.4.

~~602.4.8.1~~ 2304.11.2.2 Interior walls and partitions.*No change to text.*

~~602.4.6~~ **2304.11.3 Floors.** Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with Section ~~602.4.6.1~~2304.11.3.1 or ~~602.4.6.2~~2304.11.3.2.

~~602.4.6.2~~ **2304.11.3.1 Cross-laminated timber floors.** *Cross-laminated timber* shall be not less than 4 inches (102 mm) in actual thickness. *Cross-laminated timber* shall be continuous from support to support and mechanically fastened to one another. *Cross-laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design.Corbelling of masonry walls under the floor shall be permitted to be used.

~~602.4.6.1~~ **2304.11.3.2 Sawn or glued-laminated plank floors.** *No change to text.*

Delete without substitution:

~~**2304.11.4 Floor decks.** Floor decks and covering shall not extend closer than 1/2 inch (12.7 mm) to walls. Such~~
~~1/2-inch(12.7 mm) spaces shall be covered by a molding fastened to the wall either above or below the floor and arranged such that the molding will not obstruct the expansion or contraction movements of the floor. Corbeling of masonry walls under floors is permitted in place of such molding.~~

Revise as follows:

~~2304.11.5~~ **2304.11.4 Roof decks.** Roofs shall be without concealed spaces and roof decks shall be constructed in accordance with Section 2304.11.4.1 or2304.11.4.2.Other types of decking shall be permitted to be used where equivalent fire resistance and structural properties are being provided. Where supported by a wall, roof decksshall be anchored to walls to resist ~~uplift~~ forces determined in accordance with Chapter 16.Such anchors shall consist of steel bolts, lags, screws or ~~iron bolts~~ *approved* hardware of sufficient strength to resist ~~vertical uplift of the roof.~~prescribed forces.

~~602.4.7~~ **2304.11.4.1 ~~Roofs~~ Cross-laminated timber roofs.** ~~Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank,not less than 2 inches (51 mm) nominal in thickness; 11 /8-inch-thick(32 mm)wood structural panel (exterior glue); planks not less than 3inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.~~

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) ~~nominal in~~ in actual thickness and

shall be continuous from support to support and mechanically fastened to one another.

Add new text as follows:

2304.11.4.2Sawn, wood structuralpanel, or glued-laminated plank roofs.

Sawn,wood structural panel, or glued-laminated plank roofs shall be one of the following:

1. Sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness;
2. 11 /8-inch-thick (32mm) wood structural panel (exterior glue);
3. Planks not less than 3inches (76mm) nominal in width, set on edge close together and laid as required for floors.

TABLE ~~602.4~~ 2304.11
~~WOODMEMBER SIZE EQUIVALENCIES~~ MINIMUM DIMENSIONS OF HEAVY TIMBER STRUCTURAL MEMBERS

		MINIMUM NOMINAL SOLID SAWN SIZE		MINIMUM GLUED-LAMINATED NETSIZE		MINIMUM STRUCTURAL COMPOSITELUMBER NETSIZE	
Supporting	**Heavy Timber Structural Element**	**Width, inch**	**Depth, inch**	**Width, inch**	**Depth, inch**	**Width,inch**	**Depth, inch**
Floor loads only or combined floor and roof loads	Columns; Framed sawn or glued- laminated timber arches which spring from the floor line; Framed timber trusses	8	8	6 3/4	8 1/4	7	7 1/2
	Wood beams and girders	6	10	5	10 1/2	5 1/4	9 1/2
	Columns (roof and ceiling loads); Lower half of: Wood-frame or glued- laminated arches which spring from the floor line or from grade	6	8	5	8 1/4	5 1/4	7 1/2

Roof loads only	Upper half of: Wood-frame or glued- laminated arches which spring from the floor line or from grade	6	6	5	6	5 1/4	5 1/2
	Framed timber trusses and other roof framing;a Framed or glued-laminated arches that spring from the top of walls or wall abutments	4 b	6	3 b	6 7/8	3 1/2 b	5 1/2

For SI:1inch =25.4 mm.

aSpaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood coverplate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice lates shall be not less than 3 inches (76mm) nominal in thickness.

bWhere protected by approved automatic sprinklers under the roof deck, framing members shall be not less than 3 inches(76 mm) nominal in width.

Reason: The cross laminated timber product standard was approved in the 2015 IBC in addition to a code change allowing this material to be utilized for the construction of 2 hour exterior walls in type IV-HT construction.

Cross Laminated Timber has been manufactured for over 30 years in Europe and has just recently caught hold on the American Continent where some major structures are under way in Canada and smaller buildings are being built in the US. In Europe buildings of 8 to 10 stories and above are regularly constructed. The following link gives examples of CLT buildings throughout the world. http://www.rethinkwood.com /tall-wood-survey

Because of the high level of carbon sequestration and low embodied energy, it is anticipated there will be a renewed interest in the use of type IV heavy timber as a type of construction. One bit of feedback American Wood Council received after CLT was approved in the 2015 IBC was the observation from one building department that the heavy timber and type IV provisions are confusing, sometimes redundant and spread across different sections of the building code.

This code change is an attempt to address that concern without making any change in the substance of the requirements. Currently type IV construction and heavy timber requirements are found in Sections 602.4 and 2304.11 of the IBC. The clean up and reorganization of those sections is part one of this effort. Part two is the identification and update of many references to type IV construction and heavy timber found throughout the code.

In order to pare down Section 602.4, only the provisions specific to type IV construction remain along with a list of the types of materials found in heavy timber and the reference to the requirements for those materials in Section 2304.11. Requirements specific to type IV remain in 602.4.

Section 2304.11 can best be described as "all things heavy timber". Heavy timber structural elements have long been referenced throughout other parts of the code where a specific heavy timber structural element is detailed for use incorporated in another type of construction. The most general example of this is table 601 footnote c allowing the use of heavy timber roof construction in place of one hour fire resistance rated roof construction in types IB, II, IIIA, and VA construction. The design professional may detail heavy timber as the roof structure and assembly for these different types of construction and they are treated as building elements but the type of construction for the overall structure does not change from the type IB, II, IIIA, or VA.

Heavy timber requirements removed from Section 602.4 are combined and organized with the existing content of Section 2304. Table 602.4 is moved and renamed Table 2304.11. It is updated with information placing a description of the elements that are applicable for a given size timber element based on whether the element supports roof loads and floor loads or only roof loads. Specific footnotes about the size and protection of spaced truss elements and the reduction of roof beam width for sprinklers are noted where applicable.

The non-size related detailing provisions for framing members and connections (columns, floor framing and roof framing) are coalesced into Sections 2304.11.1.1, 2304.11.1.2 and 2304.11.1.3. All of the information in table 2304.11 and the following sections are organized so that the most pertinent information for most designs is found first.

Finally, some of the detailing provisions for traditional heavy timber are identified as such and relocated later in each section while some other information that is archaic and better replaced by reference is removed. A good example of this is the removal of the requirement for the anchorage of "every monitor and every sawtooth construction" to the main roof construction in Section 2304.11.3. New Section 2304.11.1.3 requires roof girders and alternate roof beams to be anchored to their supports as required by Chapter 16.

Finally, Sections 2304.11.2 through 2304.11.4 contain pertinent thickness and detailing requirements for walls, roof and floor deck construction.

The following table gives a more detailed description of where specific requirements are moved.

Since this change is intended not to create any new requirements or delete pertinent content, there are other code changes which contain specific code changes to this information. It is intended this code change will serve as a template for the relocation of those other specific changes through the correlation process should other specific changes be approved.

Part 2 of this effort follows with the change to specific code references to: Section 602.4, type IV construction, heavy timber and Section 2304.11.

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Section in 2015 IBC	Location in proposed change	Comments
602.4 Type IV	602.4 (same location)	modified to direct users to news section on heavy timber details; retains essentials for Type IV construction
Table 602.4	Table 2304.11	additional content is added describing the thickness of structural elements based on loading and configuration from 602.4.3 through 602.4.5
602.4.1 Fire-retardant treated wood in exterior walls, and 602.4.2 Cross-laminated timber in exterior walls	602.4.1 and 602.4.2 (same location)	thickness of wall assembly added from 602.4.8.2 item 2.
602.4.3 Columns	2304.11, Table 2304.11, and Section 2304.11.1.1	requirements combined with existing 2304.11.1 Columns; dimensions in new Table 2304.11.1
602.4.4 Floor framing	2304.11, Table 2304.11	
602.4.5 Roof framing	2304.11, Table 2304.11	
602.4.6 Floors	2304.11.3	
602.4.6.1 Sawn or glued-laminated plank floors	2304.11.3.2	the end of proposed Section 2304.11.3.2 comes from current 2304.11.2
602.4.6.2 Cross-laminated timber floors	2304.11.3.1	
602.4.7 Roofs	2304.11.4 and subsections 2304.11.4.1 and 2304.11.4.2	the current provisions of current section 2304.11.5 are folded into these sections
602.4.8 Partitions and walls and subsections 602.4.8.1 Interior walls and partitions and 602.4.8.2 Exterior walls	602.for exterior wall thickness in type IV; heavy timber in 2304.11.2 2304.11.2.1 and 2304.11.2.2	kept essentials for a Type IV building in 602.4; essentials for heavy timber in proposed section 2304.11.2
602.4.9 Exterior structural members	602.4.3	Unchanged but references proposed heavy timber section
2304.11 Heavy timber construction	2304.11 (same location)	Modified to become charging language for all heavy timber, not just Type IV construction; adds

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		charging language for proposed Table 2304.11
2304.11.1 Columns	2304.11.1.1	new section 2304.11.1.1 combines current sections 2304.11.1 and 2304.11.1.1; updates text to be more design focused; retains traditional details
2304.11.1.1 Column connections	2304.11.1.1	incorporated in 2304.11.1
2304.11.2 Floor framing	2304.11.1.2	modifies text to make lesser-used methods a permitted option
2304.11.3 Roof framing	2304.11.1.3	modifies text to refer to design for all forces, not just uplift, archaic language deleted
2304.11.4 Floor decks	2304.11.3.2	current text appears at the end of the proposed section with hardware choices updated; this section incorporates requirements for floors moved from Chapter 6
2304.11.5 Roof decks	2304.11.4	current text appears at end of proposed section, and updates language to reflect current methods and to include consideration of all forces

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7522_Rationale_G179-15reason-from2015PCA-Complete_3.png

F7553

Date Submitted	11/29/2018	**Section**	2304.11	**Proponent**	Paul Coats
Chapter	6	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

#7522 for Section 602.4 is a duplicate of this proposal which takes provisions from Chapter 6 and moves them to Chapter 23, necessitating review by both the Fire Safety and Structural TACs.

Summary of Modification

This proposed modification takes the details for heavy timber construction out of Chapter 6 and consolidates them in Chapter 23.

Rationale

The proposed modifications were approved by the ICC membership and appear in the 2018 IBC. They do not change the technical requirements for heavy timber but improve their usability. The changes shown reflect ICC code changes G179-15 (primarily), G178-15, and G175-18, which were all Approved as Submitted by the General Code Development Committee and subsequently the ICC membership (files are attached). The IBC General Code Development Committee made the following statement in the 2015 ICC Report of Committee Action Hearing, for G179-15: "The proposal provides necessary consolidation and eliminates duplicative text between Chapters 6 and 23. The revised table is sorely needed to make help the users of the code. Moving the table to Chapter 23 is totally appropriate. The was comfort that with a detailed comparision this is a good clean up with no technical changes. As with any major revision, there remained concerns that all pieces have been maintained and there might be some unintended consequences. The new organization provides better logic for the requirements." See the uploaded file for the complete rationale for the primary code change, G179-15, and a table comparing the locations of sections in the current code and what is proposed. Reason statements for G175-15 and G178-15 can also be seen in the support files for the text.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Enforcement of provisions may be easier.

Impact to building and property owners relative to cost of compliance with code

There are no changed cost implications.

Impact to industry relative to the cost of compliance with code

There are no changed cost implications.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This reorganization and consolidation of heavy timber provisions in one location will promote better compliance and better enforcement and therefore affects the safety and welfare of the general public positively.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This reorganization and consolidation of heavy timber provisions in one location will improve the usability and application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate in any way.

Does not degrade the effectiveness of the code

Retains the current effectiveness of the code and improves it.

Mod 7553

602.4 Type IV. Type IV construction ~~(Heavy Timber, HT)~~ is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, ~~or~~ laminated wood, heavy timber (HT) or structural composite lumber (SCL) without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL), and cross-laminated timber and ~~The~~ details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Interior walls and partitions not less than 1-hour fire-resistance rating or heavy timber complying with Section 2304.11.2.2 shall be permitted. ~~Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.~~

602.4.1 Fire-retardant-treated wood in exterior walls. *Fire-retardant-treated wood* framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less.

602.4.2 Cross-laminated timber in exterior walls. *Cross-laminated timber* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than 15/32 inch (12 mm) thick;
2. *Gypsum board* not less than 1/2 inch (12.7 mm) thick; or
3. A noncombustible material.

~~**602.4.3 Columns.** Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an *approved* manner. Protection in accordance with Section 704.2 is not required.~~

~~**602.4.4 Floor framing.** Wood beams and girders shall be of sawn or glued-laminated timber and shall be not less than 6 inches (152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn or glued-laminated timber arches, which spring from the floor line and support floor loads, shall be not less than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall have members of not less than 8 inches (203 mm) nominal in any dimension.~~

~~**602.4.5 Roof framing.** Wood-frame or glued-laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued-laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by *approved* automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.~~

~~**602.4.9**~~ **602.4.3 Exterior structural members.** Where a horizontal separation of 20 feet(6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with 2304.11 shall be permitted to be used externally.

2304.11 Heavy timber construction. Where a structure ~~or~~ , portion thereof ~~is~~,or individual structural elements are required to be of ~~Type IV construction~~ heavy timber by ~~other~~ provisions of this code, the building elements therein shall comply with the applicable provisions of Sections 2304.11.1 through ~~2304.11.5~~ 2304.11.4.Minimum dimensions ofheavytimber shall comply as applicable in Table2304.11 based on roofs or floors supported and the configuration of each structural element, or as applicable in Sections2304.11.2 through 2304.11.4.

2304.11.1 ~~Columns~~Details of heavy timber structural members. ~~Columns~~ Heavy timber structural members shall be ~~continuous or superimposed throughout all stories by means of reinforced concrete or metal caps~~ detailed and constructed inaccordance with ~~brackets, or shall be connected by properly designed steel or iron caps,with pintles and base plates,or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other *approved* methods.~~Sections 2304.11.1.1 through 2304.11.1.3.

2304.11.1.1~~Column connections~~Columns. Minimum dimensions of columns shall be in accordance with Table 2304.11.Columns shall be continuous or superimposed throughout all stories and connected in an *approved* manner. Girders and beams at column connections shall be closely fitted around columns and adjoining ends shall be cross tied to each other,or intertied by caps or ties,to transfer horizontal loads across joints. Wood bolsters shall not be placed on tops of columns unless the columns support roof loads only.Where traditional heavy timber detailing is used, connections shall be permitted to be by means of reinforced concrete ormetal caps with brackets, or shall be connected by properly designed steel or iron caps, with pintles and base plates, or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other approved methods.

~~2304.11.2~~ 2304.11.1.2 Floor framing. Minimum dimensions of floor framing shall be in accordance with Table 2304.11. *Approved* wall plate boxes or hangers shall be provided where wood beams, girders or trusses rest on masonry or concrete walls. Where intermediate beams are used to support a floor, they shall rest on top of girders, or shall be supported by ~~ledgers or blocks securely fastened to the sides of the girders, or they shall be supported by~~ an *approved* metal hanger into which the ends of the beams shall be closely fitted.Where traditional heavy timber detailing is used, these connections shall be permitted to be supported by ledgers or blocks securely fastened to the sides of the girders.

~~2304.11.3~~ 2304.11.1.3 Roof framing. Minimum dimensions of roof framing shall be in accordance with Table 2304.11. Every roof girder and at least every alternate roof beam shall be anchored to its supporting member; ~~and every monitor and every sawtooth construction shall be anchored to the main roof construction. Such anchors shall consist o fsteel or iron bolts of sufficient strength~~ to resist ~~vertical uplift of the roof.~~forces as required in Chapter 16.

~~602.4.8~~ 2304.11.2 Partitions and walls. Partitions and walls shall comply with Section ~~602.4.8.1~~2304.11.2.1 or ~~602.4.8.2~~ 2304.11.2.2.

~~602.4.8.2~~ 2304.11.2.1Exterior walls. Exterior walls shall permitted to be ~~of one of the following:~~

~~1. Noncombustible materials.~~

1. ~~Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~
   - ~~1.1. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.~~
   - 1.1.*Cross-laminated timber*~~complying with~~ meeting the requirements of Section ~~602.4.2~~ 2303.1.4.

~~602.4.8.1~~ **2304.11.2.2 Interior walls and partitions.***No change to text.*

~~602.4.6~~ **2304.11.3 Floors.** Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with Section ~~602.4.6.1~~2304.11.3.1 or ~~602.4.6.2~~2304.11.3.2.

~~602.4.6.2~~ **2304.11.3.1 Cross-laminated timber floors.** *Cross-laminated timber* shall be not less than 4 inches (102 mm) in actual thickness. *Cross-laminated timber* shall be continuous from support to support and mechanically fastened to one another. *Cross-laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design.Corbelling of masonry walls under the floor shall be permitted to be used.

~~602.4.6.1~~ **2304.11.3.2 Sawn or glued-laminated plank floors.** *No change to text.*

Delete without substitution:

~~**2304.11.4 Floor decks.** Floor decks and covering shall not extend closer than 1/2 inch (12.7 mm) to walls. Such~~
~~1/2-inch(12.7 mm) spaces shall be covered by a molding fastened to the wall either above or below the floor and arranged such that the molding will not obstruct the expansion or contraction movements of the floor. Corbeling of masonry walls under floors is permitted in place of such molding.~~

Revise as follows:

~~2304.11.5~~ **2304.11.4 Roof decks.** Roofs shall be without concealed spaces and roof decks shall be constructed in accordance with Section 2304.11.4.1 or2304.11.4.2.Other types of decking shall be permitted to be used where equivalent fire resistance and structural properties are being provided. Where supported by a wall, roof decksshall be anchored to walls to resist ~~uplift~~ forces determined in accordance with Chapter 16.Such anchors shall consist of steel bolts, lags, screws or ~~iron bolts~~ *approved* hardware of sufficient strength to resist ~~vertical uplift of the roof.~~prescribed forces.

~~602.4.7~~ **2304.11.4.1 ~~Roofs~~ Cross-laminated timber roofs.** ~~Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank,not less than 2 inches (51 mm) nominal in thickness; 11 /8-inch-thick(32 mm)wood structural panel (exterior glue); planks not less than 3inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.~~

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) ~~nominal in~~ in actual thickness and
shall be continuous from support to support and mechanically fastened to one another.

Add new text as follows:

2304.11.4.2Sawn, wood structuralpanel, or glued-laminated plank roofs.

Sawn,wood structural panel, or glued-laminated plank roofs shall be one of the following:

1. Sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness;
2. 11 /8-inch-thick (32mm) wood structural panel (exterior glue);
3. Planks not less than 3inches (76mm) nominal in width, set on edge close together and laid as required for floors.

Revise as follows:

TABLE ~~602.4~~ 2304.11
~~WOODMEMBER SIZE EQUIVALENCIES~~ MINIMUM DIMENSIONS OF HEAVY TIMBER STRUCTURAL MEMBERS

		MINIMUM NOMINAL SOLID SAWN SIZE	MINIMUM GLUED-LAMINATED NETSIZE	MINIMUM STRUCTURAL COMPOSITELUMBER NETSIZE

Supporting	Heavy Timber Structural Element	Width,inch	Depth, inch	Width, inch	Depth,inch	Width,inch	Depth, inch
Floor loads only or combined floor and roof loads	Columns; Framed sawn or glued- laminated timber arches which springfrom the floor line; Framed timber trusses	8	8	6 3/4	8 1/4	7	7 1/2
	Wood beams and girders	6	10	5	10 1/2	5 1/4	9 1/2
	Columns (roof and ceiling loads); Lower half of: Wood-frameor glued-laminated arches which spring from the floor line or from grade						

		6	8	5	8 1/4	5 1/4	7 1/2
	Upper half of: Wood-frameor glued-laminated arches which spring from the floor line or from grade	6	6	5	6	5 1/4	5 1/2
Roof loadsonly	Framed timber trusses and other roof framing;a Framed or glued-laminated arches that spring from the top of walls or wall abutments	4 b	6	3 b	6 7/8	3 1/2 b	5 1/2

For SI:1inch =25.4 mm.

aSpaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood coverplate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice lates shall be not less than 3 inches (76mm) nominal in thickness.

bWhere protected by approved automatic sprinklers under the roof deck, framing members shall be not less than 3 inches(76 mm) nominal in width.

F8121

Date Submitted	12/13/2018	**Section**	604	**Proponent**	Ann Russo5
Chapter	6	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

his proposal is intended to require fuel lines supplying a generator set inside a building to be separated with fire-resistance-rated construction from areas of the building other than in the room in which the generator is located.

Rationale

This proposal is intended to require fuel lines supplying a generator set inside a building to be separated with fire-resistance-rated construction from areas of the building other than in the room in which the generator is located. It mirrors the text in Section 403.4.8.2 for high-rises. This proposal extends the requirement to any building that has a generator that is separated from the rest of the building. It is common for diesel-fueled generators to supply the generators with a day tank and resupply the day tank via remote fuel oil tanks. The fuel line piping from those remote tanks to the generator can be exposed to the same fire incident that the generator has been protected against. Loss of the fuel line due to fire exposure has the same impact as loss of the generator itself.
The wording only refers to "fuel lines" to also provide protection in those cases where a gaseous fuel supply is approved for use.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves design, definition plan review criteria and enforcement

Impact to building and property owners relative to cost of compliance with code

Minimal

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety for occupants

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves requirements for safety strengthening Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Add new section:

604 Fuel line piping protection. Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in by an approved method, or an assembly that has a fire-resistance rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required fire-resistance rating shall be reduced to 1 hour.

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F8265

Date Submitted	12/14/2018	**Section**	601	**Proponent**	Paul Coats
Chapter	6	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

Revise the Nonbearing walls and partitions row of Table 601 as follows:

Nonbearing walls and partitions	Interior[d]	0	0	0	0	0

Revise footnote c to Table 601 as follows:

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

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TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15
Committee Action: Approved as Submitted
Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

Final Action: AS (Approved as Submitted)

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F8267

Date Submitted	12/14/2018	**Section**	603	**Proponent**	Paul Coats
Chapter	6	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

NO cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

Revise item 19 of 603.1 as follows:

603.1 Allowable materials.

Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. 19.Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~ 602.4.3 and 1406.3.
2.

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TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15
Committee Action: Approved as Submitted
Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

Final Action: AS (Approved as Submitted)

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	$1^1/_{2^u}$	$1^{b,c}$	$1^{b,c}$	0^c	$1^{b,c}$	0	HT	$1^{b,c}$	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F7247

Date Submitted	11/13/2018	**Section**	707.5	**Proponent**	Michael Phegley
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

To make the Fire Prevention Code and Building Code consistent with each other.

Rationale

To allow for consistent interpretation between the Fire Prevention and Building Codes.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No cost.

Impact to building and property owners relative to cost of compliance with code

No cost.

Impact to industry relative to the cost of compliance with code

No cost.

Impact to small business relative to the cost of compliance with code

No cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

It will make the two codes consistent , reducing varying interpretations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Will reduce differing interpretations.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not affect these items.

Does not degrade the effectiveness of the code

Doesn't change what is already allowed by the code.

707.5 Continuity

Fire barriers shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Such fire barriers shall be continuous through concealed space, such as the space above a suspended ceiling. Joints and voids at intersections shall comply with Sections 707.8 and 707.9

Exceptions:

1. Shaft enclosures shall be permitted to terminate at a top enclosure complying with Section 713.12.
2. Interior exit stairway and ramp enclosures required by Section 1023 and exit access stairway and ramp enclosures required by Section 1019 shall be permitted to terminate at a top enclosure complying with Section 713.12.
3. Fire barriers shall be permitted to terminate at the underside of an interstitial space, provided that the construction assembly forming the bottom of the interstitial space has a fire resistance rating not less than that of the fire barrier.

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F7495

Date Submitted	11/28/2018	**Section**	705.2	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Restores language from the previous editions (2012 IBC) and eliminates an anomaly that was in the earlier editions.

Rationale

This table was changed over the last two code cycles. The intent was to simplify the projection distance requirements by putting the requirements in a table. The change in the 2015 edition of the International Code and adopted in Florida attempted to address an anomaly within the table. However, that change created a much more restrictive requirement than what was in the 2012 IBC and earlier editions. There was no technical justification for this more restrictive requirement. In previous codes, the maximum distance that a projection would be required was 40 inches. In the current edition, a building that has a fire separation distance of 30 feet would be required to hold the projection back from the lot line by a minimum of 20 feet. This is considered over-restrictive. This change puts the requirement back to what was permitted in previous codes and eliminates the anomaly that was present in the 2012 edition.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

Does not degrade the effectiveness of the code

Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

TABLE 705.2 (705.2)
MINIMUM DISTANCE
OFPROJECTION

FIRE SEPARATION DISTANCE - FSD (~~FSD~~ feet)	MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD
0 ~~feet~~ to less than 2 ~~feet~~	Projections not permitted
~~Greater than~~ 2 ~~feet~~ to less than 3 ~~feet~~	24 inches
~~Greater than~~ 3 ~~feet~~ to less than ~~30~~ 5 ~~feet~~	24 inches plus 8 inches for every foot of FSDbeyond 3 feet or fraction thereof
~~30 feet~~5 or greater	~~20 feet~~ 40 inches

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm.

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F7496

Date Submitted	11/28/2018	**Section**	721.1	**Proponent**	Paul Coats
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

There is a related modification doing the same correction to row 27 of Table 721.1 (3)

Summary of Modification

Corrects an assembly description error in Table 721.1(3)

Rationale

The current text entry as published in the 2015 IBC is not correctly shown as the current code does not specify the resilient channel requirement as shown in the following link and the figure shown in the reason. This figure was referenced in the AWC code proposal submitted in a previous ICC code cycle and approved by the membership. The correct description and associated diagram can be found at the following location: https://awc.org/pdf/codes-standards/publications/dca/AWC-DCA3-FRR-Assemblies-1802.pdf

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact since it is a correction of a detail.

Impact to building and property owners relative to cost of compliance with code

No impact since it a correction of a detail.

Impact to industry relative to the cost of compliance with code

No impact since it is a correction of a detail.

Impact to small business relative to the cost of compliance with code

No impact since it is a correction of a detail.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Having the correct description in the code will prevent confusion and consistent compliance.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Corrects an incorrect detail.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves effectiveness of code.

Mod 7496

Revise as follows:

TABLE 721.1 (3)
MINIMUM PROTECTION FOR FLOOR AND ROOF SYSTEMS[a, q]

FLOOR OR ROOF CONSTRUCTION	ITEM NUMBER	CEILING CONSTRUCTION	THICKNESS OF FLOOR OR ROOF SLAB (inches)				MINIMUM THICKNESS OF CEILING (inches)			
			4 hours	3 hours	2 hours	1 hour	4 hours	3 hours	2 hours	1 hour

30. Wood I-joist (minimum I-joist depth $9\frac{1}{2}$" with a minimum flange depth of $1\frac{1}{2}$" and a minimum flange cross-sectional area of 2.25 square inches; minimum web thickness of $\frac{3}{8}$") @ 24" o.c. Fiberglass insulation placed between I-joists supported by the resilient channels.	30-1.1	Minimum 0.019" thick resilient channel 16" o.c. (channels doubled at wallboard end joints), placed perpendicular to the joists and attached to each joist by $1\frac{1}{4}$" Type S drywall screws. Two layers of $\frac{1}{2}$" Type X gypsum wallboard applied with the long dimension perpendicular to the ~~I-joists~~resilient channels with end joints staggered. The base layer is fastened with $1\frac{1}{4}$" Type S drywall screws spaced 12" o.c. and the face layer is fastened with $1\frac{5}{8}$" Type S drywall screws spaced 12" o.c. Face layer end joints shall not occur on the same I-joist as base layer end joints and edge joints shall be offset 24" from base layer joints. Face layer to be attached to base layer with $1\frac{1}{2}$" Type G drywall screws spaced 8" o.c. placed 6" from face layer end joints. Face layer wallboard joints to be taped and covered with joint compound.	—	—	—	Varies	—	—	—	1

(Portions of table and footnotes not shown remain unchanged)

F7497

Date Submitted	11/28/2018	**Section**	716.1	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Cleans up the language to ensure NFPA 80 is the referenced document throughout the section and correlates to changes made in the base code

Rationale

This proposal provides clarity of application of NFPA 80 and adjusts code for base line clarity.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction
This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction
This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction
This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will not increase the cost of construction
This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Does not degrade the effectiveness of the code

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

716.1 General. Opening protectives required by other sections of this code shall comply with the provisions of this section and shall be installed in accordance with NFPA 80.

716.5 **Fire door and shutter assemblies.** Approved *fire door* and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 716.5.1, 716.5.2 or 716.5.3 and the *fire protection rating* indicated in Table 716.5.*Firedoor* frames with transom lights, sidelights or both shall be permitted in accordance with Section 716.5.6.~~Fire door assemblies and shutters shall be installed in accordance with the provisions of thissection and NFPA 80.~~

716.6 Fire-protection-rated glazing. Glazing in fire window assemblies shall be fire protection rated in accordance with this section and Table 716.6. Glazing in fire door assemblies shall comply with Section 716.5.8. Fire-protection rated glazing in fire window assemblies shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257 or UL 9. ~~Fire-protection- rated glazing shall comply with NFPA 80.~~ Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 705.3, 705.8, 705.8.5 or 705.8.6 shall have a fire protection rating of not less than 3 /4 hour. Fire- protection-rated glazing in 0.5-hour fire-resistance-rated partitions is permitted to have an 0.33-hour fire protectionrating.

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F7516

Date Submitted	11/28/2018	**Section**	704.2	**Proponent**	Paul Coats
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarifies that the fire resistance of light frame columns in fire resistance rated walls can be accomplished with the membrane protection of the fire resistance rated walls, with conditions.

Rationale

This modification was approved by the ICC Fire Safety Committee and the ICC membership and appears in the 2018 IBC. The committee modified the original proposal in its approval, with the following statements: "The committee agreed that built-up solid structural elements, such as 2 or more vertical framing members, within fire-resistance rated walls of light-frame construction that meet the limitations of Section 704.4.1 can be a part of a fire-resistance rated wall assembly without requiring the individual ecasement protection of Section 704.2. The modification eliminates redundant language by referencing Section 704.4.1 for limitations. Further, the modification appropriately recognizes steel framing members for the same allowable use." This proposal is to provide further clarification to a code change proposal that was approved last cycle and is included in the 2015 IBC in Section 704.4. Elements within fire-resistance rated walls of light-frame construction are addressed directly in Section 704.4.1 (Light-frame construction) and can be a part of a fire-resistance rated wall assembly without additional fire protection. Many buildings are built out of typical light frame construction; the concentrated loads from trusses or beams must have a continuous load path to the foundation. Some jurisdictions are interpreting that those construction boundary elements, such as, built-up and solid structural elements, are columns and are requiring them to be provided with individual fire protection. It is the intent of this provision, which has
been verified by ICC staff, that it was never the intent to require individual fire protection of these elements, as they are not considered a portion of the primary
structural frame.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no adverse impact, if reflects the current interpretation of the code for most code officials.

Impact to building and property owners relative to cost of compliance with code

No impact.

Impact to industry relative to the cost of compliance with code

No impact but may reduce the cost in some cases.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Has a reasonable connection to safety and welfare by clarifying correct code application for fire resistance.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code in regard to ease of interpretation, does not change the technical requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

704.2 Column protection. Where columns are required to have protection to achieve a *fire-resistance rating*, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required *fire-resistance rating*. Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Columns that meet the limitations of Section 704.4.1.

704.4.1 Light-frame construction. Studs, columns, and boundary elements that are integral elements in ~~*load-bearing*~~ walls of light-frame construction, and are located entirely between the top and bottom plates or tracks, shall be permitted to have required *fire-resistance ratings* provided by the membrane protection provided for the ~~*load-bearing*~~ wall.

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FS7-15

704.2, 704.4.1

Proposed Change as Submitted

Proponent : David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

2015 International Building Code

Revise as follows:

704.2 Column protection. Where columns are required to have protection to achieve a *fire-resistance rating*, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required *fire-resistance rating*._ Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Columns located in a wall of light frame construction and located entirely between the top and bottom plates shall be permitted to have the fire resistance ratings provided by the membrane protection provided by the fire-resistance rated wall.

704.4.1 Light-frame construction. Studs, columns, and boundary elements that are integral elements in ~~*load-bearing*~~ *walls* of light-frame construction, and are located entirely between the top and bottom plates shall be permitted to have required *fire-resistance ratings* provided by the membrane protection provided for the ~~*load-bearing*~~ *wall*.

Reason: Reason: This proposal is to provide further clarification to a code change proposal that was approved last cycle and is included in the 2015 IBC in Section 704.4. Elements within fire-resistance rated walls of light-frame construction are addressed directly in Section 704.4.1 (Light-frame construction) and can be a part of a fire-resistance rated wall assembly without additional fire protection. Many buildings are built out of typical light frame construction; the concentrated loads from trusses or beams must have a continuous load path to the foundation. Some jurisdictions are interpreting that those construction boundary elements, such as, built-up and solid structural elements, are columns and are requiring them to be provided with individual fire protection. It is the intent of this provision, which has been verified by ICC staff, that it was never the intent to require individual fire protection of these elements, as they are not considered a portion of the primary structural frame.
This proposal was discussed and revised based on comments from the Colorado Chapter ICC Code Changes Committee and clarifies this provision is not intended to address continuous columns, does not have any connections to any elements of a structural frame, and is within a rated wall assembly.
For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes.

Cost Impact: Will not increase the cost of construction
By revising this section, there is no additional cost as it clarifies the intent of this code provision. If anything, this proposal will actually save money as some building officials and designers have interpreted this section to require stud packs or built-up columns within a rated wall assembly to be individually fire protected which

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increases construction cost.

Public Hearing Results

Committee Action: **Approved as Modified**

Modification:

704.2 Column protection. Where columns are required to have protection to achieve a fire-resistance rating, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required fire-resistance rating. Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Columns ~~located in a wall~~ that meet the limitations of ~~light frame construction and located entirely between the top and bottom plates shall be permitted to have the fire resistance ratings provided by the membrane protection provided by the fire resistance rated wall~~ Section 704.4.1.

704.4.1 Light-frame construction. Studs, columns, and boundary elements that are integral elements in walls of light-frame construction, and are located entirely between the top and bottom plates or tracks shall be permitted to have required fire-resistance ratings provided by the membrane protection provided for the wall.

Committee Reason: The committee agreed that built-up solid structural elements, such as 2 or more vertical framing members, within fire-resistance rated walls of light-frame construction that meet the limitations of Section 704.4.1 can be a part of a fire-resistance rated wall assembly without requiring the individual ecasement protection of Section 704.2. The modification eliminates redundant language by referencing Section 704.4.1 for limitations. Further, the modification appropriately recognizes steel framing members for the same allowable use.

Assembly Motion: **Disapprove**
Online Vote Results: **Failed**
Support: 34.86% (114) Oppose: 65.14% (213)
Assembly Action : **None**

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Date Submitted	11/29/2018	**Section**	705.8.5	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

Revises table 708.5 “Vertical section of openings” to allow temperature rise limitations to not apply to vertical separations as this is a different fire exposure condition than the flame barriers that project beyond the exterior wall.

Rationale

The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Impact to building and property owners relative to cost of compliance with code

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Impact to industry relative to the cost of compliance with code

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Impact to small business relative to the cost of compliance with code

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

Does not degrade the effectiveness of the code

Cost Impact: Will increase the cost of construction. The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating from both sides, but then waives one of the most critical aspects. This proposal creates the intended level of safety.

. 705.8.5Vertical separation of openings.

Openings in exterior walls in adjacent stories shall be separated vertically to protect against fire spread on the exterior of the buildings where the openings are within 5 feet (1524 mm) of each other horizontally and the opening in the lower story is not a protected opening with a fire protection rating of not less than $^{3}/_{4}$ hour. Such openings shall be separated vertically not less than 3 feet (914 mm) by spandrel girders, exterior walls or other similar assemblies that have a fire-resistance rating of not less than 1 hour, rated for exposure to fire from both sides, or by flame barriers that extend horizontally not less than 30 inches (762 mm) beyond the exterior wall. Flame barriers shall have a fire-resistance rating of not less than 1 hour. The unexposed surface temperature limitations specified in ASTM E119 or UL 263 shall not apply to the flame barriers ~~or vertical separation~~ unless otherwise required by the provisions of this code.

Exceptions:

1. 1.This section shall not apply to buildings that are three stories or less above grade plane.
2. 2.This section shall not apply to buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
3. 3.Open parking garages.

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Date Submitted	11/30/2018	**Section**	713.13.3	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revises section 713.13.3 “Chute access rooms” to ensure the intent of the code that the room and door provide a minimum level of protection to the shaft enclosing the chute and the chute access doors.

Rationale

The proposed would ensure the intent of the code that the room and door provide a minimum level of protection to the shaft enclosing the chute and the chute access doors. This intended protection is made clear in Section 713.13.1. If the room design does not allow the door to close upon failure of the self-closing requirement of the chute access door the intent of the section is defeated. This proposal brings clarity to the implied intent of the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The chute access room compartment and door provide a minimum level of protection to the shaft enclosing the chute and the chute access doors. The room should be designed to allow the room access door to close upon failure of the self-closing requirement of the chute access door. Increases protection

Impact to building and property owners relative to cost of compliance with code

Will increase the cost of construction
This proposal will increase construction costs by requiring that chute access rooms be configured to address an added performance feature contained within this proposal.

Impact to industry relative to the cost of compliance with code

Will increase the cost of construction
This proposal will increase construction costs by requiring that chute access rooms be configured to address an added performance feature contained within this proposal.

Impact to small business relative to the cost of compliance with code

Will increase the cost of construction
This proposal will increase construction costs by requiring that chute access rooms be configured to address an added performance feature contained within this proposal.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This will ensure the intent of the code that the room and door provide a minimum level of protection to the shaft enclosing the chute and the chute access doors. This intended protection is made clear in Section 713.13.1.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This intended protection is made clear in Section 713.13.1. If the room design does not allow the door to close upon failure of the self-closing requirement of the chute access door the intent of the section is defeated. This proposal brings clarity to the implied intent of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not mention materials as they already exist in the industry

Does not degrade the effectiveness of the code

This proposal increases the effectiveness of the code

713.13.3 Chute access rooms. Access openings for waste or linen chutes shall be located in rooms or compartments enclosed by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. Openings into the access rooms shall be protected by opening protectives having a *fire protection rating* of not less than 3/ hour. Doors shall be self- or automatic-closing upon the detection of smoke in accordance with Section 716.5.9.3. The room or compartment shall be configured to allow the access door to the room or compartment to close and latch with the access panel to the refuse or laundry chute in any position.

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F7596

Date Submitted	11/30/2018	**Section**	714.2	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This modification is meant to remove redundant wording, cover all listed penetration fire-stop penetration systems, and require installation in accordance with the manufacturer's instructions.

Rationale

These listed systems need to be installed in accordance with the manufacturer's installation instructions. The modification ensures this requirement is applicable to all types of listed penetration systems.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Cost Impact: Will not increase the cost of construction
Listed systems should already be installed in accordance with the manufacturer's installation instructions.

Impact to building and property owners relative to cost of compliance with code

Cost Impact: Will not increase the cost of construction
Listed systems should already be installed in accordance with the manufacturer's installation instructions.

Impact to industry relative to the cost of compliance with code

Cost Impact: Will not increase the cost of construction
Listed systems should already be installed in accordance with the manufacturer's installation instructions.

Impact to small business relative to the cost of compliance with code

Cost Impact: Will not increase the cost of construction
Listed systems should already be installed in accordance with the manufacturer's installation instructions.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This will require that all listed systems be installed in accordance with the listing. The manufacturer's instructions provide additional details that are not commonly identified in the listing criteria, including environmental conditions and tooling.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

These requirements are applicable to all types of listed penetration systems.
This requires that all listed systems be installed in accordance with the listing. The manufacturer's instructions provide details that are not commonly identified in the listing, including environmental conditions.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate but does require that all listed systems are to be installed in accordance with the listing criteria (including manufacturer's instructions).

Does not degrade the effectiveness of the code

This will ensure this requirement is applicable to all types of listed penetration systems.
The will require that all listed systems be installed in accordance with the listing. The manufacturer's instructions provide additional details that are not commonly identified in the listing.

• **714.2 Installation A listed penetration firestop system shall be installed in accordance with the manufacturer's installation instructions and the listing criteria.**

714.2.1 Installation details.

Where sleeves are used, they shall be securely fastened to the assembly penetrated. The space between the item contained in the sleeve and the sleeve itself and any space between the sleeve and the assembly penetrated shall be protected in accordance with this section. Insulation and coverings on or in the penetrating item shall not penetrate the assembly unless the specific material used has been tested as part of the assembly in accordance with this section.

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F7601

Date Submitted	11/30/2018	**Section**	706.1	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This modification clarifies the requirements of party walls located on lot lines between adjacent buildings and provides exceptions as to when firewalls are not required.

Rationale

This modification will eliminate unnecessary alternate method applications and better clarify when a fire wall is not required.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Cost Impact: Will not increase the cost of construction.
There will be a decrease in cost by providing for a more clear wording, which will reduce time for plan review and inspection.

Impact to building and property owners relative to cost of compliance with code

Cost Impact: Will not increase the cost of construction.
This modification will eliminate unnecessary alternative method applications, appeal processes and/or construction of walls not necessary for fire or life safety.

Impact to industry relative to the cost of compliance with code

Cost Impact: Will not increase the cost of construction.
This modification will eliminate unnecessary alternative method applications, appeal processes and/or construction of walls not necessary for fire or life safety.

Impact to small business relative to the cost of compliance with code

Cost Impact: Will not increase the cost of construction.
This modification will eliminate unnecessary alternative method applications, appeal processes and/or construction of walls not necessary for fire or life safety.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposed revision gives the designer clear options while maintaining safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification strengthens and improves the code with clarity, which should result in less misunderstandings.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Cost Impact: Will not increase the cost of construction.
There is no known discrimination in determining the products, materials, methods, or construction systems to be used.

Does not degrade the effectiveness of the code

The proposed modification increases the effectiveness with clarity.

706.1.1 Partywalls. Anywalllocatedonalotlinebetweenadjacentbuildings,whichis usedoradaptedforjointservicebetween the two buildings, shall be constructed as a fire wall in accordance with Section 706. Party walls shall be constructed without openings and shall create separatebuildings.

Exceptions:

1. Openings in a party wall separating an anchor building and a mall shall be in accordance with Section 402.4.2.2.1.
2. Fire walls are not required on lot lines dividing a building for ownership purposes where the aggregate heightand area of the portions of the building located on both sides of the lot line do not exceed the maximum height and area requirements of this code. The code official shall be provided with copies of dedicated access easements and contractual agreements that permit the owner of the portion of the building located on either side of the lot line access to the other side for purposes of maintaining fire and life safety systems necessary for the operation of the building for review and approval.

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F7609

Date Submitted	11/30/2018	**Section**	715.1	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This modification adds an exception for fire-resistant joints. This exception clarifies that a fire-resistant joint at the intersection of exterior curtain wall assemblies and roof slabs or roof decks are not required.

Rationale

This modification will clarify that a fire-resistant joint is not required at the intersection of an exterior curtain wall and a roof slab or roof deck and will prevent misunderstandings of the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Cost Impact: Will not increase the cost of construction
The proposals clarifies/adds an additional exemption to the need for a fire-resistant joint system.

Impact to building and property owners relative to cost of compliance with code

Cost Impact: Will not increase the cost of construction
The proposals clarifies/adds an additional exemption to the need for a fire-resistant joint system.

Impact to industry relative to the cost of compliance with code

Cost Impact: Will not increase the cost of construction
The proposals clarifies/adds an additional exemption to the need for a fire-resistant joint system.

Impact to small business relative to the cost of compliance with code

Cost Impact: Will not increase the cost of construction
The proposals clarifies/adds an additional exemption to the need for a fire-resistant joint system.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

It is occasionally assumed and misinterpreted that some protection is required at this joint. Adding this joint to the list of joints that do not require a fire-resistant joint system will prevent such mis-application of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

It is occasionally assumed and misinterpreted that some protection is required at this joint. Adding this joint to the list of joints that do not require a fire-resistant joint system will prevent such mis-application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Cost Impact: Will not increase the cost of construction.
The proposals clarifies/adds an additional exemption to the need for a fire-resistant joint system.

Does not degrade the effectiveness of the code

Section 711.4 already exempts penetrations of roof assemblies from needing protection.
In this case, it is specifically the joint between the roof slab or roof deck and the exterior curtain wall that would be exempted in a manner similar to through penetrations of a roof slab or roof deck.

715.1 General. Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies androofsorroof/ceilingassembliesshallbeprotectedbyanapproved*fire-resistantjointsystem*designed to resist the passage of fire for a time period not less than the required *fire-resistance rating* of the wall, floor or roof in or between which the system is installed. *Fire-resistant joint systems* shall be tested in accordance with Section715.3.

Exception: *Fire-resistant joint systems* shall not be required for joints in all of the following locations:

1. Floors within a single *dwelling unit*.

2. Floors where the joint is protected by a shaft enclosure in accordance with Section713.

3. Floorswithinatriumswherethespaceadjacenttothe atrium isincludedinthevolumeofthe atrium for smoke controlpurposes.

4. Floors within malls.

5. Floors and ramps within open and enclosed parking garages or structures constructedin accordance with Sections 406.5 and 406.6,respectively.

6. Mezzaninefloors.

7. Walls that are permitted to have unprotectedopenings.

8. Roofs where openings arepermitted.

9. Control joints not exceeding a maximum width of 0.625 inch (15.9 mm) and testedin accordance with ASTM E 119 or UL263.

10. The intersection of exterior curtain wall assemblies and the roof slab or roofdeck.

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F7611

Date Submitted	11/30/2018	**Section**	720.1	**Proponent**	Marcelo Hirschler
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This is clarification and cleanup. Section 720.1 is intended to apply to all insulating materials but the sentence causes confusion as is.

Rationale

This is simple clarification and language cleanup. Section 720.1 is intended to apply to all insulating materials but the sentence as is causes confusion because it refers to two types of insulation materials, namely (1) facings such as vapor retarders and vapor-permeable membranes and similar coverings and (2) all layers of single and multilayer reflective foil insulations. Therefore it is better if they are shown in a separate sentence at the end of the section that way the sentence is clearer. Other appropriate insulations and facings are also added.

The other change is that the correct section for reflective plastic core insulation materials (which are a subset of reflective insulation materials) is 2614 and not 2613.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No cost impact - clarification, for incorrect code language

Impact to building and property owners relative to cost of compliance with code

No cost impact - clarification, for incorrect code language

Impact to industry relative to the cost of compliance with code

No cost impact - clarification, for incorrect code language

Impact to small business relative to the cost of compliance with code

No cost impact - clarification, for incorrect code language

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No impact - clarification, for incorrect code language

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

No impact - clarification, for incorrect code language

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No impact - clarification, for incorrect code language

Does not degrade the effectiveness of the code

No impact - clarification, for incorrect code language

720.1General.

Insulating materials~~, including facings such as vapor retarders and *vapor-permeable membranes*, similar coverings and all layers of single and multilayer reflective foil insulations,~~ shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted. Insulating materials, when tested in accordance with the requirements of this section, shall include facings, when used, such as vapor retarders, vapor permeable membranes and similar coverings, and all layers of single and multilayer reflective foil insulation, and similar materials.

Exceptions:

1. 1.Fiberboard insulation shall comply with Chapter 23.
2. 2.Foam plastic insulation shall comply with Chapter 26.
3. 3.Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the Florida Building Code, Mechanical.
4. 4.All layers of single and multilayer reflective plastic core insulation shall comply with Section 2614 ~~2613~~.

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F7623

Date Submitted	12/1/2018	**Section**	716.1	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This modification revises sections 716.1, 716.5, and 716.6 by removing redundant wording and clarifying the requirements of NFPA 80 for opening protectives within this code.

Rationale

The testing requirements for opening protective should be located at the beginning of the section for clarity and consistency.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

Does not degrade the effectiveness of the code

Will not increase the cost of construction

This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

716.1 General. Opening protectives required by other sections of this code shall comply with the provisions of this section and shall be installed in accordance with NFPA 80.

716.5 Fire door and shutter assemblies. Approved *fire door* and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 716.5.1, 716.5.2 or 716.5.3 and the *fire protection rating* indicated in Table 716.5.*Firedoor frames with transom lights, sidelights or both shall be permitted in accordance with Section 716.5.6.~~Fire door assemblies and shutters shall be installed in accordance with the provisions of thissection and NFPA 80.~~*

Exceptions:

1. **Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B and UL 14C for tin-clad *fire door* assemblies.**

2. **Floor *fire door* assemblies in accordance with Section712.1.13.1.**

716.6 **Fire-protection-rated glazing.** Glazing in fire window assemblies shall be fire protection rated in accordance with this section and Table 716.6. Glazing in fire door assemblies shall comply with Section 716.5.8. Fire-protection rated glazing in fire window assemblies shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257 or UL 9. ~~Fire-protection-rated glazing shall comply with NFPA 80.~~ Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 705.3, 705.8, 705.8.5 or 705.8.6 shall have a fire protection rating of not less than 3 /4 hour. Fire-protection-rated glazing in 0.5-hour fire-resistance-rated partitions is permitted to have an 0.33-hour fire protectionrating.

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F7624

Date Submitted	12/1/2018	**Section**	716.3	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revises table 716.3 “Marking Fire-Rated Glazing Assemblies,” and revises section 2409.1 “Glass walkways” to maintain consistency in the code when dealing with fire-rated glazing products, by adding the testing and marking requirements for glass installed as part of a floor/ceiling assembly.

Rationale

This modification adds/clarifies the floor/ceiling marking for meeting the standard requirements.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification only increase clarity and help eliminate code misunderstandings.

Impact to building and property owners relative to cost of compliance with code

This modification will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

This modification will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

This modification will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification will not increase the cost of construction and only provides more clarity from the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification will not increase the cost of construction and improves the code by reducing misunderstandings of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification helps to better reflect existing code requirements and does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This modification will not increase the cost of construction and only provides more clarity from the code.

TABLE 716.3 (716.3)

_MARKING FIRE-RATED GLAZING ASSEMBLIES

FIRE TEST STANDARD	MARKING	DEFINITION OF MARKING
ASTM E 119 or UL 263	W	Meets wall assembly criteria.
ASTM E 119 or UL 263	FC	Meets floor/ceiling criteria[a]
NFA 257 or UL 9	OH	Meets fire window assembly criteria including the hose stream test.
NFPA 252 or UL 10B or UL 10C	D H T	Meets fire door assembly criteria. Meets fire door assembly hose stream test. Meets 450°F temperature rise criteria for 30 minutes
	XXX	The time in minutes of the fire resistance or fire protection rating of the glazing assembly.

For SI: °C = [(°F) - 32]/1.8.

a. See Section 2409.1

2409.1 Glass walkways. Glass installed as a part of a floor/ceiling assembly as a walking surface and constructed with laminated glass shall comply with ASTM E 2751 or with the load requirements specified in Chapter 16. Such assemblies shall comply with the *fire-resistance rating and marking* requirements of this code where applicable.

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F7671

Date Submitted	12/4/2018	**Section**	716.5	**Proponent**	Ann Russo3
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Addition of footnote "f" to table 716.5 to provide an appropriate reference to the additional permitted markings for fire rated glazing door vision panels found in section 716.3.1 & Table 716.3.

Rationale

Footnote f provides an appropriate reference to Table 716.3 and Section 716.3.1 resulting in easier navigation of this code section.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Allows for an additional reference to code sections related to fire rating of glazing door vision panels with no increase in cost.

Impact to building and property owners relative to cost of compliance with code

Providing footnote f to Table 716.5 provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any costs.

Impact to industry relative to the cost of compliance with code

Providing footnote f to Table 716.5 provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any cost

Impact to small business relative to the cost of compliance with code

Providing footnote f to Table 716.5 provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any cost

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Providing footnote f to Table 716.5 provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any cost.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Providing footnote f to Table 716.5 provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any cost.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Providing footnote f to Table 716.5 provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any cost.

Does not degrade the effectiveness of the code

Providing footnote f to Table 716.5 only provides a reference to the additional permitted marking requirements for fire rated glazing door vision panels and will not increase any cost.

a. Two doors, each with a fire protection rating of 11/2 hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire-door.
b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.
c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.
d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1

f. See also Section 716.3.1 and Table 716.3 for additional permitted markings.

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F7682

Date Submitted	12/4/2018	**Section**	714	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revises language in section 714.3.1.1 and section 714.1.1

Rationale

As written, these two similar sections, covering wall assemblies and horizontal assemblies, state penetrations shall be installed as tested in the approved fire-resistance-rated assembly. By definition, a penetration is a breach in the floor, floor-ceiling or wall assembly. This proposal clarifies that it is the method of protecting the penetration, not the penetration itself, that is the subject of these sections. It also revises the title of Section 714.4.1.1 to be consistent with that of Section 714.3.1.1.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not increase the cost of construction This simply clarifies the existing requirements.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction This simply clarifies the existing requirements.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction This simply clarifies the existing requirements.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction This simply clarifies the existing requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This increases safety and welfare by clarifying the existing requirements and making enforcement easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This strengthens the code by clarifying the existing requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This clarification does not discriminate against any materials, products, methods, or systems of construction of demonstrated capabilities, it only clarifies current code requirements.

Does not degrade the effectiveness of the code

It actually helps to make the code more effective through enhanced clarity.

714.3.1.1 Fire-resistance-rated assemblies. ~~Penetrations~~ Through penetrations shall be protected using systems installed as tested in ~~an~~ the approved fire-resistance-rated assembly.

714.4.1.1 ~~Installation~~ Fire-resistance-rated assemblies. Through penetrations shall be protected using systems installed as tested in the approved fire-resistance-rated assembly.

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F7683

Date Submitted	12/4/2018	**Section**	715.3	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Changes exception for horizontal separation distance for wall joint testing requirements according to minimum separation distance.

Rationale

Section 705.5 of the Building Code states the required fire-resistance rating of exterior walls with a fire separation distance of greater than 10 feet shall be required to be rated for exposure to fire from the inside only. This proposed change to the exception of Section 715.3 is intended to bring consistency between the requirements for exterior walls and fire-resistant joint systems installed within exterior walls.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This provides consistency which makes code enforcement easier.

Impact to building and property owners relative to cost of compliance with code

Any tested system previously acceptable will still be acceptable. This may provide a negligible increase cost.

Impact to industry relative to the cost of compliance with code

Since walls are already required to meet this distance this should be relatively low impact to industry.

Impact to small business relative to the cost of compliance with code

Since walls are already required to meet this distance this should be relatively low impact to small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This allows the same requirements for joints as for wall assemblies that house those joints so it will increase the safety and welfare by ensuring proper fire resistance of the wall assembly and the joints.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This will increase the safety and welfare by ensuring proper fire resistance of the wall assembly and the joints and provides a better fire resistance rating overall for the entire wall and joint.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

There is no discrimination against materials as any tested system previously acceptable will still be acceptable.

Does not degrade the effectiveness of the code

There is no degradation as any tested system previously acceptable will still be acceptable.

715.3Fire test criteria. Fire-resistant joint systems shall be tested in accordance with the requirements of either ASTM E1966 or UL 2079. Nonsymmetrical wall joint systems shall be tested with both faces exposed to the furnace, and the assigned fire-resistance rating shall be the shortest duration obtained from the two tests. Where evidence is furnished to show that the wall was tested with the least fire-resistant side exposed to the furnace, subject to acceptance of the building official, the wall need not be subjected to tests from the opposite side.

Exception: For exterior walls with a horizontal fire separation distance greater than ~~5~~ 10 feet (~~1524~~ 3048 mm), the joint system shall be required to be tested for interior fire exposure only.

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F7684

Date Submitted	12/4/2018	**Section**	716	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Adds UL10B and UL10C as additional testing standards that can be used as alternatives to the current NFPA 252 requirements.

Rationale

UL 10B and 10C have been included as comparable standards to NFPA 252 since the previous edition of the International Building Code. All other sections of the Section 716 which reference NFPA 252 also include UL 10B and 10C. This proposal revises Section 716.4 to also reference UL 10B and 10C in conjunction with NFPA 252 for consistency.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There is no impact as this only provides alternatives to current testing requirements.

Impact to building and property owners relative to cost of compliance with code

There is no impact as this only provides alternatives to current testing requirements.

Impact to industry relative to the cost of compliance with code

There is no impact as this only provides alternatives to current testing requirements.

Impact to small business relative to the cost of compliance with code

There is no impact as this only provides alternatives to current testing requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This provides alternatives to current testing requirements and makes this work with all other areas of section 716 that already refer to these test methods.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This strengthens the code because it provides alternatives to current testing requirements and makes this work with all other areas of section 716 that already refer to these test methods.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This provides alternatives to current testing requirements and therefore makes no discrimination to what is already called out in the code currently.

Does not degrade the effectiveness of the code

This provides alternatives to current testing requirements and makes this work with all other areas of section 716 that already refer to these test methods and thereby enhances the effectiveness of the code.

716.3.1 Fire-rated glazing identification.

For fire-rated glazing, the label shall bear the identification required in Tables 716.3 and 716.5. "D" indicates that the glazing is permitted to be used in fire door assemblies and that the glazing meets the fire protection requirements of NFPA 252, UL 10B or UL 10C. "H" shall indicate that the glazing meets the hose stream requirements of NFPA 252, UL 10B or UL 10C. "T" shall indicate that the glazing meets the temperature requirements of Section 716.5.5.1. The placeholder "XXX" represents the fire-rating period, in minutes.

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F7692

Date Submitted	12/5/2018	**Section**	717.3.1	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

IMC 607.3.1

Summary of Modification

This proposal relocates the reference to testing of ceiling radiation dampers. It moves the requirement found elsewhere in the code to 717.3.1 which deals with damper testing.

Rationale

The phrase "and ceiling radiation dampers" was added to Section 717.3.1, Provision 1 during the previous code cycle to differentiate ceiling radiation dampers labeled for use in dynamic systems. However, Provision 1 deals with fire dampers so the reference to ceiling radiation dampers is inappropriate. This proposal relocates the reference to ceiling radiation dampers labeled for use in dynamic systems to Provision 4 addressing ceiling radiation dampers appropriately.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This makes enforcement easier by adding additional clarification information pertaining to ceiling radiation dampers and putting language in the appropriate section within the code pertaining to these dampers.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction This code change simply clarifies the current requirements.

Impact to industry relative to the cost of compliance with code

Will not increase the cost. This code change simply clarifies the current requirements.

Impact to small business relative to the cost of compliance with code

Will not increase the cost. This code change simply clarifies the current requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This code change simply clarifies the current requirements and helps to ensure safety through proper application of dynamic ceiling radiation dampers.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This improves the code by putting all the testing requirements for dampers in the appropriate place within one section.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate against any methods or materials as it only simplifies the current code requirments.

Does not degrade the effectiveness of the code

This actually increases the effectiveness of the code by adding further clarity.

717.3.1 Damper testing. Dampers shall be listed and labeled in accordance with the standards in this section.

1. Fire dampers shall comply with the requirements of UL 555. Only fire dampers ~~and ceiling radiation dampers~~ labeled for use in dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.
2. Smoke dampers shall comply with the requirements of UL 555S.
3. Combination fire/smoke dampers shall comply with the requirements of both UL 555 and UL 555S.
4. Ceiling radiation dampers shall comply with the requirements of UL 555C or shall be tested as part of a fireresistance-rated floor/ceiling or roof/ceiling assembly in accordance with ASTM E119 or UL 263. Only ceiling radiation dampers labeled for use in dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.
5. Corridor dampers shall comply with requirements of both UL 555 and UL 555S. Corridor dampers shall demonstrate acceptable closure performance when subjected to 150 feet per minute (0.76 mps) velocity across the face of the damper during the UL 555 fire exposure test

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F7700

Date Submitted	12/5/2018	**Section**	717	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

IMC 607.3.2.1, IMC 607.3.2.3

Summary of Modification

The proposal removes the term "fire-protection rating" and changes it to "rating" because fire dampers carry an hourly "rating", not a "fire-protection rating". It also removes unnecessary language.

Rationale

This proposal is intended to clarify the requirements in this section. The term "fire-protection rating" is being changed to "rating" because fire dampers carry an hourly rating, not a "fire-protection rating". The term "for the type of penetration" was deleted because it is not needed.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will provide clarity during enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction This simply clarifies the existing requirements.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction This simply clarifies the existing requirements.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction This simply clarifies the existing requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will not increase the cost of construction This simply clarifies the existing requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This will strengthen the code because it clarifies the existing requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Will not discriminate in any way. This simply clarifies the existing requirements.

Does not degrade the effectiveness of the code

Will not degrade the effectiveness of the code. This simply clarifies the existing requirements.

717.3.2.1 Fire damper ratings.
Fire dampers shall have the minimum ~~fire protection~~ rating specified in Table 717.3.2.1 ~~for the type of penetration~~.

717.3.2.3 Combination fire/smoke damper ratings.
Combination fire/smoke dampers shall have the minimum ~~fire protection~~ rating specified for fire dampers in Table 717.3.2.1 ~~for the type of penetration~~ and shall have a minimum smoke damper rating as specified in Section 717.3.2.2.

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F7702

Date Submitted	12/5/2018	**Section**	717	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

IMC 607.5.2, IMC 607.5.5

Summary of Modification

This intent of this proposal is simply to bring consistency in terminology within Section 717, which referenced "approved" dampers instead of "listed" dampers.

Rationale

Section 717.3.1 of the Building Code is very clear that all five types of dampers shall be listed and labeled. However there are two provisions within Section 717 which reference "approved" dampers instead of "listed" dampers. This intent of this proposal is simply to bring consistency in terminology within Section 717. This does not represent a technical change, as Section 717.3.1 already requires dampers to be listed and labeled.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will make enforcement easier pertaining to dampers as it aligns with the requirements for listed dampers found throughout this section.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction This does not represent a technical change, as Section 717.3.1 already requires dampers to be listed and labeled

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction This does not represent a technical change, as Section 717.3.1 already requires dampers to be listed and labeled

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction This does not represent a technical change, as Section 717.3.1 already requires dampers to be listed and labeled

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This helps to ensure the required level of safety that accompanies the listing requirement for these devices.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This strengthens the code as it aligns with other existing sections of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate against other materials or methods.

Does not degrade the effectiveness of the code

This does not degrade the code, it enhances it.

717.5.2 Fire barriers.

Ducts and air transfer openings of fire barriers shall be protected with ~~approved~~ listed fire dampers installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for interior exit stairways and ramps and exit passageways, except as permitted by Sections 1023.5 and 1024.6, respectively.

717.5.3 Shaft enclosures.

Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with ~~approved~~ listed fire and smoke dampers installed in accordance with their listing.

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F7871

Date Submitted	12/11/2018	**Section**	714	**Proponent**	Jon Roberts
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

R302.4.2

Summary of Modification

This code change adds an additional exception to the membrane penetration compliance section and aligns with a proposal related to section 302.4.2 of the residential building code.

Rationale

The proposal adds an additional exception which recognizes the listings of recessed incandescent and fluorescent can lights, or enclosure materials which protect recessed can lights or troffer light fixtures, that have been tested as a ceiling membrane penetration of fire-resistance-rated horizontal assemblies. There are currently twenty six UL listed can lights which incorporate integral fire protection which have been evaluated for use in fire-resistance-rated horizontal assemblies. Similarly there are eleven UL listed enclosure materials which have been evaluated for their ability to protect penetrations in ceiling membranes by non fire rated can lights or troffer light fixtures.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This allows another option to meet the requirements of rate membrane penetrations. This flexibility makes enforcement of the code easier by allowing an exception that still meets the intent of the code.

Impact to building and property owners relative to cost of compliance with code

The impact is that it provides additional options so it will not increase cost.

Impact to industry relative to the cost of compliance with code

The impact is that it provides additional options so it will not increase cost.

Impact to small business relative to the cost of compliance with code

The impact is that it provides additional options so it will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

These products are already in use within the construction industry so it will allow the continuation of this use and improve the safety overall.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

These products are already in use within the construction industry so adding this into the code as an option will strengthen the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate and these products are already in use within the construction industry.

Does not degrade the effectiveness of the code

These products are already in use within the construction industry so it will allow the continuation of this use and improve the code overall.

714.4.2 - Add exception 8 as follows:

8. Ceiling membrane penetrations by listed luminaires (light fixtures) or by luminaires protected with listed materials, which have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.

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F7887

Date Submitted	12/11/2018	**Section**	716.5.9.4	**Proponent**	Joseph Hetzel
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarify vertical sliding fire doors from rolling steel fire doors.

Rationale

The "vertical" descriptor for sliding fire doors should be kept. Vertical sliding fire doors and rolling steel fire doors should be editorially separated, since rolling steel fire doors always operate vertically by definition and thus the "vertical" descriptor for those doors is redundant and unnecessary. This language was submitted to the ICC as proposal FS96-15 and was "approved as modified by public comment", which is reflected in this FBC proposal.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No impact.

Impact to industry relative to the cost of compliance with code

No impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Upholds health, safety, and welfare by clarifying fire door types.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthen and improves the code by clarifying fire door types.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code by clarifying fire door types.

716.5.9.4 Doors in pedestrian ways.

Vertical sliding fire doors or ~~vertical~~ rolling steel *fire doors* in openings through which pedestrians travel shall be heat activated or activated by smoke detectors with alarm verification.

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F7890

Date Submitted	12/11/2018	**Section**	716.5.2	**Proponent**	Joseph Hetzel
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revision to a list of assemblies, to have rolling steel fire doors represented.

Rationale

Rolling steel fire doors should be included in the list since they have been successfully required to be tested and listed to either NFPA 252 or UL 10B for many years. The other changes are typographical for consistency within the list of door types. The proposed was submitted to the ICC as FS88-15, and was approved as submitted.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No impact.

Impact to industry relative to the cost of compliance with code

No impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No negative effect on health, safety and welfare.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens and improves the code by calling attention to rolling steel fire doors.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code by calling attention to rolling steel fire doors.

716.5.2 Other types of assemblies.

Fire door assemblies with other types of doors, including swinging elevator doors, horizontal sliding fire doors ~~assemblies~~, rolling steel fire doors, ~~and~~ fire shutters ~~assemblies~~, bottom and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252or UL 10B. The pressure in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible. Once established, the pressure shall be maintained during the entire test period.

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F7891

Date Submitted	12/11/2018	**Section**	716.5.9.1	**Proponent**	Joseph Hetzel
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarification involving side-hinged swinging fire doors.

Rationale

Clarification is needed to show that side-hinged swinging fire doors, and no other types of fire doors, are being addressed in these provisions. The proposal was submitted to the ICC as FS93-15, and was approved as submitted.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No impact.

Impact to industry relative to the cost of compliance with code

No impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Upholds health, safety and welfare by clarifying side-hinged swinging fire door language usage.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens and improves the code by clarifying side-hinged swinging fire door language usage.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code by clarifying side-hinged swinging fire door language usage.

716.5.9.1 Latch required.

Unless otherwise specifically permitted, single side-hinged swinging *fire doors* and both leaves of pairs of side-hinged swinging *fire doors* shall be provided with an active latch bolt that will secure the door when it is closed.

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F7919

Date Submitted	12/14/2018	**Section**	717.3.3.1	**Proponent**	Amanda Hickman
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

#7928
#7936
#7938

Summary of Modification

This modification revises terminology used in section 717.3.3.1

Rationale

"Primary heat responsive device" is the terminology used in UL 555 and as such, should be the phrase used in the Florida Building Code. The change in the title is consistent with the title used for smoke damper actuation.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification uses current terminology, which will provide clarity to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This modification will have no cost impact, it is simply a change in terminology to be consistent with the UL standard.

Impact to industry relative to the cost of compliance with code

This modification will have no cost impact, it is simply a change in terminology to be consistent with the UL standard.

Impact to small business relative to the cost of compliance with code

This modification will have no cost impact, it is simply a change in terminology to be consistent with the UL standard.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification updates to the current terminology, which will assist in proper enforcement of fire damper inspection.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification updates to the current terminology consistent with UL test standard.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate, it only updates the terminology.

Does not degrade the effectiveness of the code

This modification improves the effectiveness of the code by updating to the proper technology.

Revise as follows:

717.3.3.1 Fire damper actuation ~~device~~.

~~The *fire damper* actuation device~~ Primary heat responsive devices used to actuate fire dampers shall meet one of the following requirements:

1. 1.The operating temperature shall be approximately 50°F (10°C) above the normal temperature within the duct system, but not less than 160°F (71°C).
2. 2.The operating temperature shall be not more than 350°F (177°C) where located in a smoke control system complying with Section 909.

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F7928

Date Submitted	12/14/2018	**Section**	717.4	**Proponent**	Amanda Hickman
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

#7919
#7936
#7938

Summary of Modification

This modification revises section 717.4

Rationale

It is understood that periodic inspection and testing is typically within the scope of the IFC. However, it is not uncommon to alert interested parties to these requirements in the IBC (for example see Chapter 9). In this instance it is important for the design professional to be aware of the inspection and testing requirements since they impact the access requirements contained in the IBC. In addition, the proposal provides design professionals with an alternative of remote testing (as permitted by NFPA 80 and NFPA 105) in situations where adequate access for inspection and testing cannot be provided.

The proposed minimum size of the opening is consistent with NFPA 90A, a mandatory reference in the Florida Fire Prevention Code. If a design professional does not check the Fire Code, without the minimum size of the opening specified in the Building Code a situation could occur in which the design potentially complies with the Building Code but not the Fire Code.

In addition, the inspection and testing of dampers in health care facilities is a regular compliance item for AHCA, CMS, and Accrediting Organizations. From the facility perspective, accessing such dampers for testing raises some concerns with regard to infection control. By providing an option for remote testing, the compliance rate for damper inspection and testing should increase in health care facilities in the State of Florida.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The proposed minimum size of the opening is consistent with NFPA 90A, a mandatory reference in the Florida Fire Prevention Code Therefore, this modification will make code enforcement easier.

Impact to building and property owners relative to cost of compliance with code

The alternative for remote testing does not impact the cost of construction because it is not required. However, recognizing that remote testing is an option may actually decrease the cost of construction in instances where providing adequate access is challenging.

Impact to industry relative to the cost of compliance with code

The alternative for remote testing does not impact the cost of construction because it is not required. However, recognizing that remote testing is an option may actually decrease the cost of construction in instances where providing adequate access is challenging.

Impact to small business relative to the cost of compliance with code

The alternative for remote testing does not impact the cost of construction because it is not required. However, recognizing that remote testing is an option may actually decrease the cost of construction in instances where providing adequate access is challenging.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification will provide proper identification and access for inspection for dampers, which will ensure the proper maintenance and operation. This will promote better life safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification will provide proper identification and access for inspection for dampers, which will ensure the proper maintenance and operation. This will strengthen and improve the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, this modification only adds guidance on proper, testing and inspection of dampers.

Does not degrade the effectiveness of the code

This modification improves the effectiveness of the code by including the proper inspection and testing guidance for dampers.

717.4 Access and identification. Access and identification of fire and smoke dampers shall comply with sections 717.4.1 through 717.4.2

717.4.1 Access. Fire and smoke dampers shall be provided with an approved means of access that is large enough to permit inspection and maintenance of the damper and its operating parts. Dampers equipped with fusible likes, internal operators, or both shall be provided with an access door that is not less than 12 inches (305 mm) square or provided with a removable duct section.

717.4.1.1 Access openings. The access shall not affect the integrity of fire-resistance-rated assemblies. The access openings shall not reduce the fire-resistance rating of the assembly. Access doors in ducts shall be tight fitting and suitable for the required duct construction.

717.4.1.2 Restricted access. Where space constraints or physical barriers restrict access to a damper for periodic inspection and testing, the damper shall be a single- or multi-blade type damper and shall comply with the remote inspection requirements of NFPA 80 or NFPA 105.

717.4.2 Identification. Access points shall be permanently identified on the exterior by a label having letters not less than 1/2 inch (12.7 mm) in height reading: FIRE/SMOKE DAMPER, SMOKE DAMPER or FIRE DAMPER. ~~Access doors in ducts shall be tight fitting and suitable for the required duct construction.~~

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F8087

Date Submitted	12/13/2018	**Section**	708.4	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

The proposed addition of exception #7 to Section 708.4 will make provisions of this section consistent with the exceptions in Section 718.3 and 718.4

Rationale

Sections 718.3.2 exception #1, 718.3.3 exception, 718.4.2 exception #2, and 718.4.3 exception allow elimination of draft stops in concealed combustible floor or attic spaces when the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 (NFPA 13). Section 708.4 exception 6 allows elimination of draftstopping when a NFPA 13 sprinkler system is installed and the combustible floor and attic spaces are sprinkler protected, Exceptions in section 718.3 and 718.4 do not require sprinkler protection of combustible floor of attic spaces to allow elimination of draft stops when building is protected by a NFPA 13 automatic sprinkler system. NFPA 13 has specific provisions that would allow elimination of sprinkler protection in combustible concealed spaces (such as filling the combustible concealed spaces with non-combustible insulation). Either exceptions to section 718.3 and 718.4 have to be revised to indicate that draftstopping can only be eliminated when concealed combustible spaces are sprinkler protected or another exception would be required in Section 708.4 to coordinate the noted exceptions with each other. The proposed exception creates this consistency. The reason exception #6 of Section 708.4 remains unchanged is because this exception allows elimination of "fire blocking" as well as draftstopping while the proposed exception #7 only addresses draftstopping.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No Impact

Impact to building and property owners relative to cost of compliance with code

No Impact

Impact to industry relative to the cost of compliance with code

No Impact

Impact to small business relative to the cost of compliance with code

No Impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by making it consistent with other sections of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code by making it consistent with other sections of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no effect on and does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities (553.73(9)(a)4,F.S.)*

Does not degrade the effectiveness of the code

Increases the effectiveness of the code by making it consistent with other sections of the code.

708.4 Continuity.

Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwelling units*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.

Exceptions:

1. The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating*.
2. Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.
3. Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shall be permitted to terminate at the upper membrane of such ceiling assembly.
4. The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.
5. Attic fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four *stories above grade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwelling units*, whichever is smaller.
6. Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces.
7. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

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Code Change No: FS40-15

Original Proposal

Section: 708.4

Proponent: Masoud Sabounchi, Representing Colorado Chapter of ICC, representing masoud sabounchi (masoud@acecode.com)

Revise as follows:

708.4 Continuity. Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwellingunits*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.

Exceptions:

1. The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating*.
2. Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.
3. Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shallbe permitted to terminate at the upper membrane of such ceiling assembly.
4. The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.
5. Attic fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four *stories above grade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwelling units*, whichever is smaller.
6. Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces.
7. <u>Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.</u>

Reason: Sections 718.3.2 exception #1, 718.3.3 exception, 718.4.2 exception #2, and 718.4.3 exception allow elimination of draft stops in concealed combustible floor or attic spaces when the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 (NFPA 13). Section 708.4 exception 6 allows elimination of draftstopping when a NFPA 13 sprinkler system is installed and the combustible floor and attic spaces are sprinkler protected, Exceptions in section 718.3 and 718.4 do not require sprinkler protection of combustible floor of attic spaces to allow elimination of draft stops when building is protected by a NFPA 13 automatic sprinkler system. NFPA 13 has specific provisions that would allow elimination of sprinkler protection in combustible concealed spaces (such as filling the combustible concealed spaces with non-combustible insulation). Either exceptions to section 718.3 and 718.4 have to be revised to indicate that draftstopping can only be eliminated when

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concealed combustible spaces are sprinkler protected or another exception would be required in Section 708.4 to coordinate the noted exceptions with each other. The proposed exception creates this consistency. The reason exception #6 of Section 708.4 remains unchanged is because this exception allows elimination of "fire blocking" as well as draftstopping while the proposed exception #7 only addresses draftstopping.

Cost Impact: Will not increase the cost of construction
The proposed addition of exception #7 to Section 708.4 will make provisions of this section consistent with the exceptions in Section 718.3 and 718.4 and will not increase the construction cost.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that the exception eliminating the requirement for draftstopping in buildings throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 was appropriate taking into account similar provisions in other sections of the code.

Assembly Action: **None**

Final Hearing Results

FS40-15	**AS**

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F8133

Date Submitted	12/14/2018	**Section**	709.5	**Proponent**	John Woestman
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

1. Update text of references to IBC 1010.1.4.3. Special purpose horizontal sliding, accordion, or folding doors as the name of this section and these products were revised for the 2017 FBC.

Rationale

This proposal updates the text of references to FBC 1010.1.4.3. Special purpose horizontal sliding, accordion or folding doors as the name of this section and these products were revised for the 2017 FBC. Most of the references to 1010.1.4.3 were updated previously. These were not.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Should improve consistency in code interpretation and enforcement.

Impact to building and property owners relative to cost of compliance with code

No cost increase and may reduce cost of compliance by improving consistency in code interpretation, application, specifications, and enforcement.

Impact to industry relative to the cost of compliance with code

No cost increase and may reduce cost of compliance by improving consistency in code interpretation, application, specifications, and enforcement.

Impact to small business relative to the cost of compliance with code

No cost increase and may reduce cost of compliance by improving consistency in code interpretation, application, specifications, and enforcement.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

With improving consistency in code interpretation, application, specifications, and enforcement, this helps with getting the appropriate doors in the appropriate locations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves usability of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of 3/4 inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer's listing, positive- latching devices are not required.

2. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, special purpose horizontal sliding, accordion or folding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716.

1010.1.4.2 Power-operated doors. Where *means of egress* doors are operated or assisted by power, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit *means of egress* travel or closed where necessary to safeguard *means of egress*. The forces required to open these doors manually shall not exceed those specified in Section 1010.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging open from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Power-operated swinging doors, power-operated sliding doors and power operated folding doors shall comply with BHMA A156.10. Power-assisted swinging doors and low energy power-operated swinging doors shall comply with BHMA A156.19.

Exceptions:

1. Occupancies in Group I-3.

2. Special purpose ~~H~~horizontal sliding, accordion or folding doors complying with Section 1010.1.4.3.

3. For a biparting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1010.1.1, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

Index:

DOORS. 1010

Access-controlled 1010.1.9.8

Atrium enclosures 404.6

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Configuration 1007

Dwelling unit separations. 406.3.4, 412.5.1

Emergency escape 1030.1

Fabrication (HPM) areas 415.11.1.2

Fire

(see OPENING PROTECTIVES) . . . 715.4, 1023.4

Glazing. 715.4.7, 715.5, 1405.13

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Hardware

(see LOCKS AND LATCHES) 1005.7.1, 1010.1.9.8, 1010.1.9, 1010.1.10

Special purpose ~~H~~horizontal sliding, accordion or folding 1010.1.4.3

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Hazardous occupancy 414.5.2, 415.11.10, 421.8, 2702.2.8, 2702.2.13,

High-rise 403.4.5, 2702.2.9

Special purpose ~~H~~horizontal sliding, accordion or folding doors 1010.1.4.3, 2702.2.10

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F8140

Date Submitted	12/14/2018	**Section**	709.5	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

NA

Summary of Modification

Add a sentence to the end of 709.5 Exception number 1 that reads as follows: Factory applied or field applied protective plates are not required to be labeled.

Rationale

This code change follows with the established intent of this section. Smoke barriers are intended to be substantial construction and providing protective plates provides additional protection to the doors keeping the original construction free from damage thus in a more substantial manner. They do not provide the same fire resistance rating as a true 1 hour fire barrier. A correlative change is planned for the IFC Section 1105.6.3 as part of the Group B proposals.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No Impact to local entity relative to enforcement of code (553.73(9)(b),F.S.)*

Impact to building and property owners relative to cost of compliance with code

No Impact to building and property owners relative to cost of compliance with code (553.73(9)(b),F.S.)*

Impact to industry relative to the cost of compliance with code

No Impact to industry relative to the cost of compliance with code (553.73(9)(b),F.S.)*

Impact to small business relative to the cost of compliance with code

No Impact to small business relative to the cost of compliance with code (553.73(9)(b),F.S.)*

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Has a reasonable and substantial connection with the health, safety, and welfare of the general public by providing clarification that labels are not required for protective plates on these doors under exception 1.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens or improves the code by providing clarification that labels are not required for protective plates on these doors under exception 1.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Because labels are not required for protective plates on the doors this change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code

This change improves the effectiveness of the code. Smoke barriers are intended to be substantial construction and providing protective plates provides additional protection to the doors keeping the original construction free from damage thus in a more substantial manner.

709.5Openings.

Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of 3/4 inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer's listing, positive-latching devices are not required.Factory applied or field applied protective plates are not required to be labeled.
2. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, horizontal sliding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716.

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Code Change No: FS44-15

Original Proposal

Section: 709.5

Proponent: John Williams, CBO, CBO, Chair, Adhoc Healthcare Committee, representing Adhoc Health Care Committee (AHC@iccsafe.org); Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Revise as follows:

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of 3/4 inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer's listing, positive-latching devices are not required. Factory applied or field applied protective plates are not required to be labeled.
2. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, horizontal sliding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716.

Reason: Smoke barrier doors are typically installed across corridors and patient treatment areas. These doors see a very high volume of gurney and bed traffic, as well as carts, wheeled equipment and transport devices. As a result they are often damaged. This proposal would allow the installation of a non-labeled protective plate, usually made of steel or other resilient material, to be installed on these doors to protect them from excessive wear and damage. Due to the size of equipment being wheeled through, these protective plates need to be allowed to be greater than 48" high. Currently NFPA 80 would require that the protective plates on rated doors be limited to 48" and that they be labeled. The doors in smoke barriers do not function as true fire doors. This section contains many special directives and requirements exempting smoke barriers doors from meeting fire door requirements. This code change follows with the established intent of this section. Smoke barriers are intended to be substantial construction and providing protective plates provides additional protection to the doors keeping the original construction free from damage thus in a more substantial manner. They do not provide the same fire resistance rating as a true 1 hour fire barrier.

A correlative change is planned for the IFC Section 1105.6.3 as part of the Group B proposals.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx .

Cost Impact: Will not increase the cost of construction
Allowing the use of non-labled plates will be less costly than requiring labeled plates.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that since these doors were not required to be fire resistance rated there was no need for requiring labeling of the protective plates.

Assembly Action: **None**

Final Hearing Results

FS44-15	**AS**

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F8187

Date Submitted	12/14/2018	**Section**	712.1.10.1	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

strike out the words "open and enclosed" in the middle of the sentence and the word "respectively" at the end of the sentence. The current language in the code is redundant and confusing.

Rationale

The current language in the code is redundant and confusing. The new language allows openings that may be used for other purposes including occupant mobility.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There is no impact to local entity relative to enforcement of code (553.73(9)(b),F.S.)*

Impact to building and property owners relative to cost of compliance with code

There is no impact to building and property owners relative to cost of compliance with code (553.73(9)(b),F.S.)*

Impact to industry relative to the cost of compliance with code

This change should reduce the cost of construction as it will clarify how openings are permitted in floors of parking garages.

Impact to small business relative to the cost of compliance with code

This change should reduce the cost of construction as it will clarify how openings are permitted in floors of parking garages.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification has a reasonable and substantial connection with the health, safety, and welfare of the general public by clarifying how openings are permitted in floors of parking garages.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction by clarifying how openings are permitted in floors of parking garages.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code

This modification increases the effectiveness of the code

712.1.10.1 Automobile ramps.

Vertical openings for automobile ramps in ~~open and enclosed~~ parking garages shall be permitted where constructed in accordance with Sections 406.5 and 406.6~~, respectively~~.

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Code Change No: FS46-15

Original Proposal

Section(s): 712.1.10.1

Proponent: David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

Revise as follows:

712.1.10.1 Automobile ramps. Vertical openings for automobile ramps in ~~open and enclosed~~ parking garages shall be permitted where constructed in accordance with Sections 406.5 and 406.6~~, respectively~~.

Reason: The current language in the code is redundant and confusing. The new language allows openings that may be used for other purposes including occupant mobility.

Cost Impact: Will not increase the cost of construction
This change should reduce the cost of construction as it will clarify how openings are permitted in floors of parking garages.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that the current language in the code is redundant and confusing and that the new language allows openings that may be used for other purposes including occupant mobility.

Assembly Action: **None**

Public Comments

Public Comment 1:

David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Modified by this Public Comment.

Further modify as follows:

402.4.1.3 Parking garage. The *building area* and *building height* of any parking garage~~, open or enclosed~~, shall be based on the type of construction as required by Sections 406.5 and 406.6, respectively.

402.4.2.3 Parking garages. An attached garage for the storage of passenger vehicles having a capacity of not more than nine persons and *open parking garages* shall be considered as a separate building where it is separated from the *covered or open mall building* or *anchor building* by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

Parking garages~~, open or enclosed,~~ which are separated from *covered mall buildings*, *open mall buildings* or *anchor buildings*, shall comply with the provisions of Table 602.

Pedestrian walkways and tunnels that connect garages to *mall* buildings or *anchor buildings* shall be constructed in accordance with Section 3104.

704.9 Impact protection. Where the fire protective covering of a structural member is subject to impact damage from moving vehicles, the handling of merchandise or other activity, the fire protective covering shall be protected by corner guards or by a substantial jacket of metal or other noncombustible material to a height adequate to provide full protection, but not less than 5 feet (1524 mm) from the finished floor.

Exception: Corner protection is not required on concrete columns in ~~open or enclosed~~ parking garages.

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712.1.10 Parking garages. Vertical openings in parking garages for automobile ramps, elevators and duct systems shall comply with Section 712.1.10.1, 712.1.10.2 or 712.1.10.3, as applicable.

712.1.10.1 Automobile ramps. Vertical openings for automobile ramps in ~~open and enclosed~~ parking garages shall be permitted where constructed in accordance with Sections 406.5 and 406.6, respectively.

712.1.10.2 Elevators. Vertical openings for elevator hoistways in ~~open or enclosed~~ parking garages that serve only the parking garage, and complying with Sections 406.5 and 406.6, respectively, shall be permitted.

712.1.10.3 Duct systems. Vertical openings for mechanical exhaust or supply duct systems in ~~open or enclosed~~ parking garages complying with Sections 406.5 and 406.6, respectively, shall be permitted to be unenclosed where such duct system is contained within and serves only the parking garage.

715.1 General. Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved *fire-resistant joint system* designed to resist the passage of fire for a time period not less than the required *fire-resistance rating* of the wall, floor or roof in or between which the system is installed. *Fire-resistant joint systems* shall be tested in accordance with Section 715.3.

Exception: *Fire-resistant joint systems* shall not be required for joints in all of the following locations:

1. Floors within a single *dwelling unit*.
2. Floors where the joint is protected by a shaft enclosure in accordance with Section 713.
3. Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke control purposes.
4. Floors within malls.
5. Floors and ramps within ~~open and enclosed~~ parking garages or structures constructed in accordance with Sections 406.5 and 406.6, ~~respectively.~~
6. Mezzanine floors.
7. Walls that are permitted to have unprotected openings.
8. Roofs where openings are permitted.
9. Control joints not exceeding a maximum width of 0.625 inch (15.9 mm) and tested in accordance with ASTM E 119 or UL 263.

722.2.2.1 Reinforced and prestressed floors and roofs. The minimum thicknesses of reinforced and prestressed concrete floor or roof slabs for *fire-resistance ratings* of 1 hour to 4 hours are shown in Table 722.2.2.1.

Exception: Minimum thickness shall not be required for floors and ramps within ~~open and enclosed~~ parking garages constructed in accordance with Sections 406.5 and 406.6, ~~respectively~~.

[P] 2902.3 Employee and public toilet facilities. Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. The number of plumbing fixtures located within the required toilet facilities shall be provided in accordance with Section 2902.1 for all users. Employees shall be provided with toilet facilities in all occupancies. Employee toilet facilities shall be either separate or combined employee and public toiletfacilities.

Exception: Public toilet facilities shall not be required in:

1. ~~Open or enclosed~~ Parking garages where there are no parking attendants.
2. Structures and tenant spaces intended for quick transactions, including takeout, pickup and drop-off, having a public access area less than or equal to 300 square feet (28 m^2).

Commenter's Reason: The original FS 46-15 proposal is an editorial change, cleaning up language referring to *parking garages* that was leftover from previous code changes. The code originally stated just *"open"* parking garages before *"enclosed"* was later added. For these sections of the code, those two distinctions to "(public) *parking garages*" are no longer needed.

Final Hearing Results

FS46-15	AMPC1

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F8196

Date Submitted	12/14/2018	**Section**	713.8	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

Membrane penetrations should be permitted on the outside of the shaft enclosure. This modification would add language at the end of the section to that effect.

Rationale

The purpose of Section 713.8 and 713.8.1 is to limit through penetrations into a shaft enclosure; however, membrane penetrations should be permitted on the outside of the shaft enclosure. As currently written, an electrical box is not permitted on the outside of the shaft enclosure. This section needs to clarify the intent of Section 713.8.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification has no impact to local entity relative to enforcement of code (553.73(9)(b),F.S.)*

Impact to building and property owners relative to cost of compliance with code

The code change proposal will not increase the cost of construction since it will allow membrane penetrations in shaft enclosures without the need for additional construction/material on the outside of the shaft enclosure. Also, it increases net area for the building.

Impact to industry relative to the cost of compliance with code

The code change proposal will not increase the cost of construction since it will allow membrane penetrations in shaft enclosures without the need for additional construction/material on the outside of the shaft enclosure. Also, it increases net area for the building.

Impact to small business relative to the cost of compliance with code

The code change proposal will not increase the cost of construction since it will allow membrane penetrations in shaft enclosures without the need for additional construction/material on the outside of the shaft enclosure. Also, it increases net area for the building.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification will not negatively impact health, safety, and welfare of the general public

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This Modification improves the code, and provides equivalent or better products, methods, or systems of construction.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This Modification does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code

This modification does not degrade the effectiveness of the code

Penetrations.
Penetrationsinashaftenclosureshallbeprotectedinaccordancewith Section 714 as required for *fire barriers*. Structural elements, such as beams or joists, where protected in accordance with Section 714 shall be permitted to penetrate a shaftenclosure.

713.8.1 Prohibitedpenetrations.
Penetrationsotherthanthosenecessaryforthepurposeoftheshaft shall not be permitted in shaftenclosures.

Add new text as follows:

713.8.2 Membrane penetrations.

Membrane penetrations shall be permitted on the outside of shaft enclosures. Such penetrations shall be protected in accordance with Section714.3.2.

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Code Change No: FS49-15

Original Proposal

Section(s): 713.8.2 (New)

Proponent: Matthew Davy, representing Arup (matt.davy@arup.com)

713.8 Penetrations. Penetrations in a shaft enclosure shall be protected in accordance with Section 714 as required for *fire barriers*. Structural elements, such as beams or joists, where protected in accordance with Section 714 shall be permitted to penetrate a shaft enclosure.

713.8.1 Prohibited penetrations. Penetrations other than those necessary for the purpose of the shaft shall not be permitted in shaft enclosures.

Add new text as follows:

713.8.2 **Membrane penetrations.** Membrane penetrations shall be permitted on the outside of shaft enclosures. Such penetrations shall be protected in accordance with Section 714.3.2.

Reason: The purpose of Section 713.8 and 713.8.1 is to limit through penetrations into a shaft enclosure; however, membrane penetrations should be permitted on the outside of the shaft enclosure. As currently written, an electrical box is not permitted on the outside of the shaft enclosure. This section needs to clarify the intent of Section 713.8.

Cost Impact: Will not increase the cost of construction
The code change proposal will not increase the cost of construction since it will allow membrane penetrations in shaft enclosures without the need for additional construction/material on the outside of the shaft enclosure. Also, it increases net area for the building.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee felt this was a good change based on the fact that these membrane penetrations were already allowed in exit passageways and shafts.

Assembly Action: **None**

Public Comments

Public Comment 1:

Maureen Traxler, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Approve as Modified by this Public Comment.

Modify as follows:

713.8.1 Prohibited penetrations. Penetrations other than those necessary for the purpose of the shaft shall not be permitted in shaft enclosures.

Exception: Membrane penetrations shall be permitted on the outside of shaft enclosures. Such penetrations shall be protected in accordance with Section 714.3.2.

713.8.2 ~~**Membrane penetrations.** Membrane penetrations shall be permitted on the outside of shaft enclosures. Such penetrations shall be protected in accordance with Section 714.3.2.~~

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Commenter's Reason: This is an editorial comment that does not change the meaning of the original proposal. The proposed new Section 713.8.2 functions as an exception to the prohibition on penetrations in existing Section 713.8.1.

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Date Submitted	12/14/2018	**Section**	716.5.9.3	**Proponent**	John Woestman
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

The FBC is silent regarding delayed action closers. This proposal includes a definition and requirements for where delayed action closers may be installed.

Rationale

The FBC is silent regarding allowing delayed action closers, and applicable requirements.

Delayed action closer functionality is commonly required and / or desired for closers installed on doors. Example: delayed action closers are frequently used in schools to allow a teacher to lead a group of students from one area of the building to another. A door with a delayed action closer allows the teacher with a group of students to pass through the door before it closes, helping to keep the group intact.

Unlike automatic-closing doors which are commonly held in an open position, self-closing doors which are not automatic-closing doors are normally in a closed position unless being used. Thus, in a fire situation, the doors within the scope of this proposal would be closed except when being used and during the relatively brief delay caused by the delayed action closer.

Costs: None. Delayed action closers are not currently required or prohibited by the code. This proposal provides appropriate guidance where delayed action closers are installed.

For reference; FBC definition:
SELF-CLOSING. As applied to a fire door or other opening protective, means equipped with a device that will ensure closing after having been opened.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Minor implications to code enforcement by defining delayed action closers and identifying where delayed action closers are permitted to be installed.

Impact to building and property owners relative to cost of compliance with code

Costs: None. Delayed action closers are not currently required or prohibited by the code. This proposal provides appropriate guidance where delayed action closers are installed.

Impact to industry relative to the cost of compliance with code

Costs: None. Delayed action closers are not currently required or prohibited by the code. This proposal provides appropriate guidance where delayed action closers are installed.

Impact to small business relative to the cost of compliance with code

Costs: None. Delayed action closers are not currently required or prohibited by the code. This proposal provides appropriate guidance where delayed action closers are installed.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Provides appropriate guidance for delayed action closers on doors in the means of egress.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code by addressing a topic where the code has been silent.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Add definition to Chapter 2:

Delayed action closers. Self-closing device that incorporates a delay prior to the initiation of closing. Delayed action closers are mechanical devices with an adjustable delay.

Revise as follows:

716.5.9 Door closing. *Fire doors* shall be latching and self- or automatic-closing in accordance with this section.

Exceptions:

1. *Fire doors* located in common walls separating *sleeping units* in Group R-1 shall be permitted without automatic- or *self-closing* devices.

2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.

716.5.9.1 Latch required. Unless otherwise specifically permitted, single *fire doors* and both leaves of pairs of side-hinged swinging *fire doors* shall be provided with an active latch bolt that will secure the door when it is closed.

716.5.9.1.1 Chute intake door latching. Chute intake doors shall be positive latching, remaining latched and closed in the event of latch spring failure during a fire emergency.

716.5.9.2 Automatic-closing fire door assemblies. Automatic-closing *fire door* assemblies shall be *self-closing* in accordance with NFPA 80.

716.5.9.3 Delayed action closers. Doors required to be self-closing and not required to be automatic closing shall be permitted to be equipped with delayed action closers.

Renumber subsequent sections

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F8269

Date Submitted	12/14/2018	**Section**	705.2.3	**Proponent**	Paul Coats
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265, 8267

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

1. **705.2.3Combustible projections.**

Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour *fire-resistance-rated* construction, ~~Type IV~~ heavy timber construction complying with Section 2304.11, *fire-retardant-treated* wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F8304

Date Submitted	12/15/2018	**Section**	713.13	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

The code section as published is in error. Chapter 5 of NFPA 82 includes requirements for incinerators however Ch 6 includes requirement for waste and linen chutes.

Rationale

The code section as published is in error. Chapter 5 of NFPA 82 includes requirements for incinerators however Ch 6 includes requirement for waste and linen chutes. Section 713.13.5 appropriately references a section in Ch 5 of NFPA 82 for incinerator rooms. This corrected reference will result in correct code application.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will have a positive impact to local entity relative to enforcement of code as it corrects a mistaken reference in the code.

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners relative to cost of compliance with code. Will not increase the cost of construction No cost impact editorial code change.

Impact to industry relative to the cost of compliance with code

No impact to industry relative to the cost of compliance with code. Will not increase the cost of construction No cost impact editorial code change.

Impact to small business relative to the cost of compliance with code

No impact to small business relative to the cost of compliance with code. Will not increase the cost of construction No cost impact editorial code change.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by correcting a code reference.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction by correcting a code reference.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities. This is a code reference correction.

Does not degrade the effectiveness of the code

Increases the effectiveness of the code by correcting a code reference.

713.13 Waste and linen chutes and incinerator rooms.

Waste and linen chutes shall comply with the provisions of NFPA 82, Chapter ~~5~~ 6 and shall meet the requirements of Sections 713.13.1 through 713.13.6. Incinerator rooms shall meet the provisions of Sections 713.13.4 through 713.13.5.

Exception: Chutes serving and contained within a single dwelling unit.

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Code Change No: FS50-15

Original Proposal

Section: 713.13

Proponent: Ali Fattah, City of San Diego Development Services, representing SD Area Chapter ICC

Revise as follows:

713.13 Waste and linen chutes and incinerator rooms. Waste and linen chutes shall comply with the provisions of NFPA 82, Chapter ~~5~~ 6 and shall meet the requirements of Sections 713.13.1 through 713.13.6. Incinerator rooms shall meet the provisions of Sections 713.13.4 through 713.13.5.

Exception: Chutes serving and contained within a single dwelling unit.

Reason: The code section as published is in error. Chapter 5 of NFPA 82 includes requirements for incinerators however Ch 6 includes requirement for waste and linen chutes. Section 713.13.5 appropriately references a section in Ch 5 of NFPA 82 for incinerator rooms. This corrected reference will result in correct code application.

Bibliography: 2014 edition of NFPA 82 "STANDARD ON INCINERATORS AND WASTE AND LINEN HANDLING SYSTEMS AND EQUIPMENT"

Cost Impact: Will not increase the cost of construction
No cost impact editorial code change.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that Chapter 6 of NFPA 82 was the correct reference for Waste and linen chutes.

Assembly Action: **None**

Final Hearing Results

FS50-15	**AS**

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F8306

Date Submitted	12/15/2018	**Section**	713.13.1	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

Insert wording that permits a recycling chute to be located in the same shaft with a waste chute. Hazard associated with a recycling chute is not any different than that of a waste chute.

Rationale

Section 713.13.1 implies that a recycling chute is not permitted to be located in the same shaft with a waste chute. Hazard associated with a recycling chute is not any different than that of a waste chute. To provide two side by side shaft enclosures to enclose the recycling and the waste chute does not provide additional safety especially since chutes have specific installation requirements, sprinkler protection, ventilation and similar.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There is no impact to local entity relative to enforcement of code as this modification only allows 2 chutes to be contained in the same shaft enclosure

Impact to building and property owners relative to cost of compliance with code

This proposal does not increase the cost of construction because the proposed revision allows one shaft to contain a recycling and a waste chute where two separate shaft enclosures might be required otherwise. This proposal reduces cost of construction.

Impact to industry relative to the cost of compliance with code

This proposal does not increase the cost of construction because the proposed revision allows one shaft to contain a recycling and a waste chute where two separate shaft enclosures might be required otherwise. This proposal reduces cost of construction.

Impact to small business relative to the cost of compliance with code

This proposal does not increase the cost of construction because the proposed revision allows one shaft to contain a recycling and a waste chute where two separate shaft enclosures might be required otherwise. This proposal reduces cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The health, safety, and welfare of the general public will not be affected by allowing the 2 chutes to be contained within the same shaft enclosure.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification improves the code, and provides equivalent or better products, methods, or systems of construction by allowing the 2 chutes to be contained within the same shaft enclosure.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities by allowing the 2 chutes to be contained within the same shaft enclosure.

Does not degrade the effectiveness of the code

This modification does not degrade the effectiveness of the code by allowing the 2 chutes to be contained within the same shaft enclosure.

713.13.1 Waste and linen.

A shaft enclosure containing a recycling, or waste or linen chute shall not be used for any other purpose and shall be enclosed in accordance with Section 713.4. A shaft enclosure shall be permitted to contain recycling and waste chutes. Openings into the shaft, from access rooms and discharge rooms, shall be protected in accordance with this section and Section 716. Openings into chutes shall not be located in *corridors*. Doors into chutes shall be self-closing. Discharge doors shall be self- or automatic-closing upon the actuation of a smoke detector in accordance with Section 716.5.9.3, except that heat-activated closing devices shall be permitted between the shaft and the discharge room.

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Code Change No: FS52-15

Original Proposal

Section: 713.13.1

Proponent: Masoud Sabounchi, Representing Colorado Chapter of ICC, representing masoud sabounchi (masoud@acecode.com)

Revise as follows:

713.13.1 Waste and linen. A shaft enclosure containing a recycling, or waste or linen chute shall not be used for any other purpose and shall be enclosed in accordance with Section 713.4. A shaft enclosure shall be permitted to contain recycling and waste chutes. Openings into the shaft, from access rooms and discharge rooms, shall be protected in accordance with this section and Section 716. Openings into chutes shall not be located in *corridors*. Doors into chutes shall be self-closing. Discharge doors shall be self- or automatic-closing upon the actuation of a smoke detector in accordance with Section 716.5.9.3, except that heat-activated closing devices shall be permitted between the shaft and the discharge room.

Reason: Section 713.13.1 implies that a recycling chute is not permitted to be located in the same shaft with a waste chute. Hazard associated with a recycling chute is not any different than that of a waste chute. To provide two side by side shaft enclosures to enclose the recycling and the waste chute does not provide additional safety especially since chutes have specific installation requirements, sprinkler protection, ventilation and similar.

Cost Impact: Will not increase the cost of construction
This proposal does not increase the cost of construction because the proposed revision allows one shaft to contain a recycling and a waste chute where two separate shaft enclosures might be required otherwise. This proposal reduces cost of construction.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that a recycling chute should be permitted to be located in the same shaft with a waste chute based on the similar hazards associated with each.

Assembly Action: **None**

Final Hearing Results

FS52-15 **AS**

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F8308

Date Submitted	12/15/2018	**Section**	716.5.8.1.2.1	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

Modify this section to limit the area of the glazing to be 100 square inches in lieu of limiting any dimension to be 10 inches.

Rationale

This code change deletes the 10 inch maximum dimension applied to 100 square inch vision panels limits for swinging doors in horizontal exits. The 10 inch dimension limit is not applied to any other 100 square inch maximum glazing size references in Section 716. The 10 inch dimension limit may also result in a conflict with ADA Standards for Accessible Design, which specifies glazing height requirements for doors and sidelights adjacent to doors. Deleting the 10 inch maximum dimension limit for horizontal exits will allow for a fire door vision panel that meets ADA 43 inch height limits and the goal of accessible design.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification has no impact to local entity relative to enforcement of code. It only provides greater construction options.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. If anything this proposal allows greater construction options.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction. If anything this proposal allows greater construction options.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. If anything this proposal allows greater construction options.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification has a reasonable and substantial connection with the health, safety, and welfare of the general public by allowing greater construction options.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction by allowing greater construction options.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities by allowing greater construction options.

Does not degrade the effectiveness of the code

This modification does not degrade the effectiveness of the code by allowing greater construction options.

716.5.8.1.2.1 Horizontal exits.

Fire-protection-rated glazing shall be permitted as vision panels in *self- closing* swinging *fire door* assemblies serving as horizontal exits in *fire walls* where limited to 100 square inches (0.065 m2) ~~with no dimension exceeding 10 inches (0.3 mm)~~.

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Back

Code Change No: FS92-15

Original Proposal

Section: 716.5.8.1.2.1

Proponent: Michael O'Brian, representing Fire Code Action Committee (fcac@iccsafe.org)

Revise as follows:

716.5.8.1.2.1 Horizontal exits. Fire-protection-rated glazing shall be permitted as vision panels in *self-closing* swinging *fire door* assemblies serving as horizontal exits in *fire walls* where limited to 100 square inches (0.065 m^2) ~~with no dimension exceeding 10 inches (0.3 mm)~~.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc

This code change deletes the 10 inch maximum dimension applied to 100 square inch vision panels limits for swinging doors in horizontal exits. The 10 inch dimension limit is not applied to any other 100 square inch maximum glazing size references in Section 716, including Sections 716.5.5.1, 716.5.8.1.2.2 and Table 716.5. The 10 inch dimension limit may also result in a conflict with ADA Standards for Accessible Design, which specifies glazing height requirements for doors and sidelights adjacent to doors. Deleting the 10 inch maximum dimension limit for horizontal exits will allow for a fire door vision panel that meets ADA 43 inch height limits and the goal of accessible design.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
If anything this proposal allows greater construction options.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that deleting the 10 inch maximum dimension limit for horizontal exits will allow for a fire door vision panel that meets ADA 43 inch height limits and the goal of accessible design.

Assembly Action: **None**

Final Hearing Results

FS92-15	**AS**

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F8324

Date Submitted	12/15/2018	**Section**	716.5.9.1	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

Modify the section to clarify that single fire doors shall be side-hinged swinging also.

Rationale

Clarification is needed to show that side-hinged swinging fire doors, and no other types of fire doors, are being addressed in these provisions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There is no impact to local entity relative to enforcement of code. This modification is just a clarification of the intent of the code.

Impact to building and property owners relative to cost of compliance with code

There is no impact to building and property owners relative to cost of compliance with code. This modification is just a clarification of the intent of the code. Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

There is no impact to industry relative to the cost of compliance with code. This modification is just a clarification of the intent of the code. Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

There is no impact to small business relative to the cost of compliance with code. This modification is just a clarification of the intent of the code. Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification has a reasonable and substantial connection with the health, safety, and welfare of the general public as it relates to the types of doors requiring latches.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction as it relates to the types of doors requiring latches.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities as it relates to the types of doors requiring latches.

Does not degrade the effectiveness of the code

This modification improves the effectiveness of the code as it relates to the types of doors requiring latches.

716.5.9.1 Latch required.

Unless otherwise specifically permitted, single *side-hinged swinging fire doors* and both leaves of pairs of side-hinged swinging *fire doors* shall be provided with an active latch bolt that will secure the door when it is closed.

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Code Change No: FS93-15

Original Proposal

Section: 716.5.9.1

Proponent: Joseph Hetzel, Thomas Associates, Inc. representing DASMA, representing Door & Access Systems Manufacturers Association (Jhetzel@thomasamc.com)

Revise as follows:

716.5.9.1 Latch required. Unless otherwise specifically permitted, single *side-hinged swinging fire doors* and both leaves of pairs of side-hinged swinging *fire doors* shall be provided with an active latch bolt that will secure the door when it is closed.

Reason: Clarification is needed to show that side-hinged swinging fire doors, and no other types of fire doors, are being addressed in these provisions.

Cost Impact: Will not increase the cost of construction
None. The language change has no effect on the product and thus no effect on construction cost, thus no study is needed.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that this proposal clarifies that only side-hinged swinging fire doors are being addressed in these provisions.

Assembly Action: **None**

Final Hearing Results

FS93-15	**AS**

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Complete Research History to the 2018 I-Codes: Successful Changes with Public Comments

IBC-24132

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Date Submitted	12/15/2018	**Section**	716.5.9.3	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments **No**

Alternate Language **No**

Related Modifications

NA

Summary of Modification

Delete items which are addressed in the items specific to smoke barriers, shaft enclosures, fire & smoke barriers. Items are reworded & renumbered to be correct. Fire barriers were added to the list for doors that protect openings in exit enclosures, vertical shafts, incidental uses, etc.

Rationale

The intent of this proposal is clarification. Current items 1, 2, 3, 10 and 11 are addressed in the items specific to smoke barriers, shaft enclosures, fire barriers and smoke barriers respectively. They should be deleted as redundant. Current items 4 through 9 and 12 are reworded to be consistent and to be technically correct. Fire barriers were added to the list to address doors that protect openings in exit enclosures, vertical shafts, incidental uses, etc. Items are proposed to be renumbered to be in the same order as they are found in the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification is only a clarification of requirements and therefore has no impact to local entity relative to enforcement of code

Impact to building and property owners relative to cost of compliance with code

This modification is only a clarification of requirements and therefore has no impact to building and property owners relative to cost of compliance with code. Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

This modification is only a clarification of requirements and therefore has no impact to industry relative to the cost of compliance with code. Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

This modification is only a clarification of requirements and therefore has no impact to small business relative to the cost of compliance with code. Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification is a clarification of requirements and has a reasonable and substantial connection with the health, safety, and welfare of the general public

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification is a clarification of requirements and strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification is a clarification of requirements and does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This modification is a clarification of requirements and improves the effectiveness of the code.

Section:

716.5.9.3 Smoke-activated doors.

Automatic-closing doors installed in the following locations shall be permitted to have hold-open devices. Doors shall automatically close ~~automatic-closing~~ by the actuation of smoke detectors installed in accordance with Section 907.3 or by loss of power to the smoke detector orhold-opendevice.Doors thatareautomatic-closing bysmokedetectionshallnothavemorethana10- second delay before the door starts to close after the smoke detector is actuated.: Automatic-closing doors that protect openings installed in the following locations shall comply with thissection:

~~1. Doors installed across acorridor.~~

~~2. DoorsinstalledintheenclosuresofexitaccessstairwaysandrampsinaccordancewithSections 1019 and 1023,respectively.~~

~~3. Doorsthatprotectopeningsinexitsorcorridorsrequiredtobeoffire-resistance-rated construction.~~

1.~~4. Doors that protect openings~~ in walls ~~that are capable of resisting the passage of smoke~~ that separate incidental uses in accordance with Section 509.4.

2.~~7. Doors installed~~ In *fire ~~wall~~ walls* in accordance with Section 706.8.

3. In *fire barriers* in accordance with Section 707.6

4.~~6. Doors installed~~ In *fire partitions* in accordance with Section 708.6.

5. ~~Doors installed~~ In *smoke barriers* in accordance with Section 709.5.

6.~~12. Doors installed~~ In smoke partitions in accordance with Section 710.5.2.3.

7.~~8. Doors installed~~ In shaft enclosures in accordance with Section 713.7.

8.~~9. Doors installed~~ In waste and linen chutes, discharge openings and access and discharge rooms in accordance with Section 713.13. Loading doors installed in waste and linen chutes shall meet the requirements of Sections 716.5.9 and 716.5.9.1.1.

~~10 Doors installed in the walls for compartmentation of underground buildings in accordance with Section 405.4.2.~~

~~11. Doors installed in the elevator lobby walls of underground buildings in accordance with Section 405.4.3.~~

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Code Change No: FS95-15

Original Proposal

Section: 716.5.9.3

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org); Adolf Zubia, Chair, representing Fire Code Action Committee (fcac@iccsafe.org)

Revise as follows:

716.5.9.3 Smoke-activated doors. Automatic-closing doors installed in the following locations shall be permitted to have hold-open devices. Doors shall automatically close ~~automatic-closing~~ by the actuation of smoke detectors installed in accordance with Section 907.3 or by loss of power to the smoke detector or hold-open device. Doors that are automatic-closing by smoke detection shall not have more than a 10-second delay before the door starts to close after the smoke detector is actuated.~~:~~ Automatic-closing doors that protect openings installed in the following locations shall comply with this section:

~~1. Doors installed across a corridor.~~
~~2. Doors installed in the enclosures of exit access stairways and ramps in accordance with Sections 1019 and 1023, respectively.~~
~~3. Doors that protect openings in exits or corridors required to be of fire-resistance-rated construction.~~
1.~~4. Doors that protect openings~~ in walls ~~that are capable of resisting the passage of smoke~~ that separate incidental uses in accordance with Section 509.4.
2.~~7. Doors installed~~ In *fire ~~wall~~ walls* in accordance with Section 706.8.
3. In *fire barriers* in accordance with Section 707.6
4.~~6. Doors installed~~ In *fire partitions* in accordance with Section 708.6.
5. ~~Doors installed~~ In *smoke barriers* in accordance with Section 709.5.
6.~~12. Doors installed~~ In smoke partitions in accordance with Section 710.5.2.3.
7.~~8. Doors installed~~ In shaft enclosures in accordance with Section 713.7.
8.~~9. Doors installed~~ In waste and linen chutes, discharge openings and access and discharge rooms in accordance with Section 713.13. Loading doors installed in waste and linen chutes shall meet the requirements of Sections 716.5.9 and 716.5.9.1.1.
~~10 Doors installed in the walls for compartmentation of underground buildings in accordance with Section 405.4.2.~~
~~11. Doors installed in the elevator lobby walls of underground buildings in accordance with Section 405.4.3.~~

Reason: The intent of this proposal is clarification. Current items 1, 2, 3, 10 and 11 are addressed in the items specific to smoke barriers, shaft enclosures, fire barriers and smoke barriers respectively. They should be deleted as redundant. Current items 4 through 9 and 12 are reworded to be consistent and to be technically correct. Fire barriers were added to the list to address doors that protect openings in exit enclosures, vertical shafts, incidental uses, etc. Items are proposed to be renumbered to be in the same order as they are found in the code.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well

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as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of requirements; therefore, there is no increase in cost.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that the proposal editorially clarifies Section 716.5.9.3 and deletes redundant language.

Assembly Action: **None**

Final Hearing Results

FS95-15	**AS**

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F8336

Date Submitted	12/15/2018	**Section**	716.6.2	**Proponent**	Richard Logan
Chapter	7	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

NA

Summary of Modification

Revise the section to indicate that the fire-resistance rating of exterior walls with a fire separation distance of greater than 10 feet, not 5 feet, shall be rated for exposure to fire from the inside only. This distance was increased from 5 feet to 10 feet with the 2009 edition of the IBC.

Rationale

Section 705.5 of the 2015 International Building Code (IBC) states the required fire-resistance rating of exterior walls with a fire separation distance of greater than 10 feet shall be rated for exposure to fire from the inside only. This distance was increased from 5 feet to 10 feet with the 2009 edition of the IBC. This proposed change to the Section 716.6.2 brings consistency between the requirements for exterior walls and glazing systems installed within exterior walls.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification is a correction of this section to correlate to existing code requirements and has no impact to local entity relative to enforcement of code

Impact to building and property owners relative to cost of compliance with code

This modification is a correction of this section to correlate to existing code requirements and has no impact to building and property owners relative to cost of compliance with code. Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

This modification is a correction of this section to correlate to existing code requirements and has no impact to industry relative to the cost of compliance with code.Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

This modification is a correction of this section to correlate to existing code requirements and has no impact to small business relative to the cost of compliance with code. Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification is a correction of this section to correlate to existing code requirements and has a reasonable and substantial connection with the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification is a correction of this section to correlate to existing code requirements and strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification is a correction of this section to correlate to existing code requirements and does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This modification is a correction of this section to correlate to existing code requirements and improves the effectiveness of the code.

716.6.2 Nonsymmetrical glazing systems.

Nonsymmetrical fire-protection-rated glazing systems in *fire partitions*, *fire barriers* or in *exterior walls* with a *fire separation distance* of ~~5~~ 10 feet (~~1524~~ 3048 mm) or less pursuant to Section 705 shall be tested with both faces exposed to the furnace, and the assigned *fire protection rating* shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9.

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Code Change No: FS98-15

Original Proposal

Section: 716.5.9.3

Proponent: Michael O'Brian, representing Fire Code Action Committee (fcac@iccsafe.org)

Revise as follows:

716.6.2 Nonsymmetrical glazing systems. Nonsymmetrical fire-protection-rated glazing systems in *fire partitions*, *fire barriers* or in *exterior walls* with a *fire separation distance* of ~~5~~ 10 feet (~~1524~~ 3048 mm) or less pursuant to Section 705 shall be tested with both faces exposed to the furnace, and the assigned *fire protection rating* shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc

Section 705.5 of the 2015 International Building Code (IBC) states the required *fire-resistance rating* of *exterior walls* with a *fire separation distance* of greater than 10 feet shall be rated for exposure to fire from the inside only. This distance was increased from 5 feet to 10 feet with the 2009 edition of the IBC. This proposed change to the Section 716.6.2 brings consistency between the requirements for exterior walls and glazing systems installed within exterior walls.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal provides better correlation to existing code requirements.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed that the proposed change to the Section 716.6.2 brings consistency between the requirements for exterior walls and glazing systems installed within exterior walls.

Assembly Action: **None**

Final Hearing Results

FS98-15 **AS**

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F7507

Date Submitted	11/28/2018	**Section**	803.3	**Proponent**	Paul Coats
Chapter	8	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Removes heavy timber in interior exit elements from the exception to interior finish requirements.

Rationale

Cross laminated timber may be used to form the entire interior surfaces of egress elements and should be regulated in those circumstances. The requirement is the same for any other material used in those circumstances. This change was approved by the ICC Fire Safety Code Development Committee with the following comment: "The committee agreed that when heavy timber is used to form the interior surfaces of egress elements they should be subject to the interior finish requirements for that location." The change was approved by the ICC membership and appears in the 2018 IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact since compliance with interior finish requirements is routine.

Impact to building and property owners relative to cost of compliance with code

No impact since compliance with interior finish requirements is already routine.

Impact to industry relative to the cost of compliance with code

May increase costs slightly when certain materials alternatives are chosen, with minor impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

With CLT, solid timber walls and floors are now feasible; regulating interior finish of CLT in interior exit elements provides greater safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code by providing reasonable parameters for safety with the use of CLT in exit elements and therefore provides for flexibility of choice in materials.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Increases the effectiveness of the code.

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of Type IV construction in Section 602.4 shall not be subject to interior finish requirements, except in interior stairways, interior exit ramps, and exit passageways.

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FS 132-15

803.3

Proponent: David Tyree, representing American Wood Council (dtyree@awc.org)

2015 International Building Code

Revise as follows:

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of Type IV construction in Section 602.4 shall not be subject to *interior finish* requirements except in interior exit stairways, interior exit ramps, and exit passageways.

Reason: Cross laminated timber may be used to form the entire interior surfaces of egress elements and should be regulated in those circumstances. The requirement is the same for any other material used in those circumstances. For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes.

Cost Impact: Will increase the cost of construction
May increase cost of construction as a higher flamespread requirement would be required in these new areas.

FS 132-15 : 803.3-TYREE4646

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F7547

Date Submitted	12/14/2018	**Section**	804	**Proponent**	Tim Earl
Chapter	8	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7511 (Section 406.8.3)
7546 (Section 424.2)
7548 (Section 35)

Summary of Modification

This change adds ASTM E648 as an option to NFPA 253, since they are equivalent tests. This is the same thing we do for Steiner Tunnel testing, where the code (throughout) requires testing to ASTM E84 or UL 723.

Rationale

ASTM E648 is technically equivalent to NFPA 253. Since the flooring industry routinely references ASTM E648, this proposal will remove confusion when test reports reference the ASTM test instead of the NFPA test. This proposal also correlates with the 2018 IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to building and property owners relative to cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to industry relative to the cost of compliance with code

This change may result in a small costs savings to industry, since those who submit ASTM E648 test reports currently have to either ask the lab to provide another test report referencing NFPA 253, or have a code consultant explain to the code official that they are equivalent tests.

Impact to small business relative to the cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This section is about the fire performance of flooring products, which is critical to life safety. The change itself simply improves the usability of the code by recognizing two equivalent tests instead of one.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This change is material neutral, as flooring products are tested in an identical manner using ASTM E648 or NFPA 253. The only difference is what is listed on the test report.

Does not degrade the effectiveness of the code

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

804.2 Classification. Interior floor finish and floor covering materials required by Section 804.4.2 to be of Class I or II
materials shall be classified in accordance with ASTM E648 or NFPA 253. The classification referred to herein corresponds
to the classifications determined by ASTM E648 or NFPA 253 as follows: Class I, 0.45 watts/cm2 or greater; Class II, 0.22
watts/cm2 or greater.
804.3 Testing and identification. Interior floor finish and floor covering materials shall be tested by an agency in accordance
with ASTM E648 or NFPA 253 and identified by a hang tag or other suitable method so as to identify the manufacturer or
supplier and style, and shall indicate the interior floor finish or floor covering classification in accordance with Section 804.2.
Carpet-type floor coverings shall be tested as proposed for use, including underlayment. Test reports confirming the information provided in the manufacturer's product identification shall be furnished to the building official upon request.

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F7620

Date Submitted	11/30/2018	**Section**	803	**Proponent**	Marcelo Hirschler
Chapter	8	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

None

Summary of Modification

This modifies section 803 to make it more logical and adds two new products.

Rationale

This reorganizes section 803 to make it follow the testing logic, but it does not change any of the requirements (with two additions, as described below).
Moving NFPA 286 to the beginning of the section is editorial, and is appropriate for more products and removes redundant language; ASTM E84 remains an option for materials to meet; and the section as a whole becomes more enforceable as it is more easily understood.
The two added sections (803.11 and 803.12, with section 803.11 becoming 803.13) address laminated wood products, either (a) with the product factory-made and brought to the building as a finished product or (b) with a facing or veneer brought to the building and installed over a wood substrate. Such products need special handling because they will behave differently and it has been shown that, when veneers are applied over a wood substrate the resulting flame spread is much higher than when applied over gypsum board or over a non-combustible substrate.
ASTM committee E05 on fire tests developed two different mounting practices for testing these types of products with ASTM E84. In the case of factory produced panels, they have to be tested with ASTM E84 as a finished wood product. Therefore, the requirement in ASTM E2579 (which is the mounting practice for wood products) is that the testing be done with the full product and, thus, there will no need to retest for different substrates. Facings applied on site over wood substrates are tested using ASTM E2404 (which is the mounting practice for wall coverings and has a special section for coverings with a wood substrate). In this case what is being tested is the facing or veneer itself, and it is tested on a wood substrate, in the same way that wall coverings are tested.
Similarly, NFPA 286 contains sections that addresses testing of wall covering materials, including facings applied on site, and testing of laminated products produced in a factory.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Easier code enforcement - also adds two new products

Impact to building and property owners relative to cost of compliance with code

Increase cost for veneered products only - the rest is editorial and logical

Impact to industry relative to the cost of compliance with code

Increase cost for veneered products only - the rest is editorial and logical

Impact to small business relative to the cost of compliance with code

Increase cost for veneered products only - the rest is editorial and logical

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety with regard to veneered products.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves safety with regard to veneered products.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination

Does not degrade the effectiveness of the code

Improves code enforcement

803.1 General.

Interior wall and ceiling finish materials shall be classified for fire performance and smoke development in accordance with Section 803.1.1 or 803.1.2, except as shown in Sections ~~803.2~~ 803.1.3 through 803.13. Materials tested in accordance with Section 803.1.1 ~~803.1.2~~ shall not be required to be tested in accordance with Section 803.1.2 ~~803.1.1~~.

803.1.1 Interior wall and ceiling finish materials tested in accordance with NFPA 286.

Interior wall and ceiling finish materials shall be classified in accordance with NFPA 286 and comply with Section 803.1.1.1. Materials complying with Section 803.1.1.1 shall be considered to also comply with the requirements of a Class A in accordance with Section 803.1.2. ~~ASTM E84 or UL 723. Such *interior finish* materials shall be grouped in the following classes in accordance with their flame spread and *smoke-developed indexes*.~~

~~Class A: = Flame spread index 0-25; smoke developed index 0-450.~~

~~Class B: = Flame spread index 26-75; smoke developed index 0-450.~~

~~Class C: = Flame spread index 76-200; smoke developed index 0-450.~~

~~**Exception:** Materials tested in accordance with Section 803.1.2.~~

803.1.1.1 Acceptance criteria for NFPA 286.

The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
3. Flashover, as defined in NFPA 286, shall not occur.
4. The peak heat release rate throughout the test shall not exceed 800 kW.
5. The total smoke released throughout the test shall not exceed 1,000 m^2.

803.1.2 Interior Wall or Ceiling Finish Materials Tested in Accordance with ASTM E84 or UL 723 ~~Room corner test for interior wall or ceiling finish materials.~~

Interior wall and ~~*or*~~ *ceiling finish* materials shall be classified in accordance with ASTM E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes. ~~permitted to be tested in accordance with NFPA 286. Interior wall or ceiling finish materials tested in accordance with NFPA 286 shall comply with Section 803.1.2.1.~~

Class A: = Flame spread index 0-25; smoke developed index 0-450.

Class B: = Flame spread index 26-75; smoke developed index 0-450.

Class C: = Flame spread index 76-200; smoke developed index 0-450.

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~~**803.1.2.1 Acceptance criteria for NFPA 286.**~~

~~The interior finish shall comply with the following:~~

~~1. 1.During the 40 kW exposure, flames shall not spread to the ceiling.~~
~~2. 2.The flame shall not spread to the outer extremity of the sample on any wall or ceiling.~~
~~3. 3.Flashover, as defined in NFPA 286, shall not occur.~~
~~4. 4.The peak heat release rate throughout the test shall not exceed 800 kW.~~
~~5. 5.The total smoke released throughout the test shall not exceed 1,000 m^2.~~

803.1.3 Interior wall and ceiling finish materials with different requirements ~~**Room corner test for textile wall coverings and expanded vinyl wall coverings.**~~ The materials indicated in Sections 803.2 through 803.13 shall be tested as indicated in the corresponding sections.

~~Textile wall coverings and expanded vinyl wall coverings shall meet the criteria of Section 803.1.3.1 when tested in the manner intended for use in accordance with the Method B protocol of NFPA 265 using the product-mounting system, including adhesive.~~

~~**803.1.3.1 Acceptance criteria for NFPA 265.**~~

~~The interior finish shall comply with the following:~~

~~1. 1.During the 40 kW exposure, flames shall not spread to the ceiling.~~
~~2. 2.The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.~~
~~3. 3.Flashover, as defined in NFPA 265, shall not occur.~~
~~4. 4.The total smoke released throughout the test shall not exceed 1,000 m^2.~~

~~**803.1.4 Acceptance criteria for textile and expanded vinyl wall or ceiling coverings tested to ASTM E84 or UL 723.**~~

~~Textile wall and ceiling coverings and expanded vinyl wall and ceiling coverings shall have a Class A flame spread index in accordance with ASTM E84 or UL 723 and be protected by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E2404.~~

803.2 Thickness exemption.

Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls or ceilings shall not be required to be tested.

803.3 Heavy timber exemption.

Exposed portions of building elements complying with the requirements for buildings of Type IV construction in Section 602.4 shall not be subject to *interior finish* requirements.

803.4 Foam plastics.

Foam plastics shall not be used as *interior finish* except as provided in Section 2603.9. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.

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803.5 Textile wall coverings.

Where used as interior wall finish materials, textile wall coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of one of the following: Section 803.1.1, Section 803.5.1 or Section 803.5.2 ~~Section 803.1.2, 803.1.3 or 803.1.4~~.

803.5.1 Room corner test for textile wall coverings and expanded vinyl wall coverings. Textile wall coverings and expanded vinyl wall coverings shall meet the criteria of Section 803.5.1.1 when tested in the manner intended for use in accordance with the Method B protocol of NFPA 265 using the product mounting system, including adhesive.

803.5.1.1 Acceptance criteria for NFPA 265.

The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.
3. Flashover, as defined in NFPA 265, shall not occur.
4. The total smoke released throughout the test shall not exceed 1,000 m^2.

803.5.1.2 Acceptance criteria for textile and expanded vinyl wall or ceiling coverings tested to ASTM E84 or UL 723.

Textile wall and ceiling coverings and expanded vinyl wall and ceiling coverings shall have a Class A flame spread index in accordance with ASTM E84 or UL 723 and be protected by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E2404.

803.6 Textile ceiling coverings.

Where used as interior ceiling finish materials, textile ceiling coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.1 or of Section 803.5.2 ~~803.1.2 or 803.1.4~~.

803.7 Expanded vinyl wall coverings.

Where used as interior wall finish materials, expanded vinyl wall coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of one of the following: Section 803.1.1, Section 803.5.1 or Section 803.5.2 ~~Section 803.1.2, 803.1.3 or 803.1.4~~.

803.8 Expanded vinyl ceiling coverings.

Where used as interior ceiling finish materials, expanded vinyl ceiling coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.1 or of Section 803.5.2 ~~803.1.2 or 803.1.4~~.

803.9 High-density polyethylene (HDPE) and polypropylene (PP).

Where high-density polyethylene or polypropylene is used as an interior finish it shall comply with Section 803.1.1 ~~803.1.2~~.

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803.10 Site-fabricated stretch systems.

Where used as interior wall or interior ceiling finish materials, site-fabricated stretch systems containing all three components described in the definition in Chapter 2 shall be tested in the manner intended for use, and shall comply with the requirements of Section 803.1.1 or 803.1.2. If the materials are tested in accordance with ASTM E84 or UL 723, specimen preparation and mounting shall be in accordance with ASTM E2573.

803.11 Laminated products factory-produced with a wood substrate Laminated products factory-produced with a wood substrate shall comply with one of the following:

1. The laminated product shall meet the criteria of Section 803.1.1 when tested in accordance with NFPA 286 using the product mounting system, including adhesive, of actual use, as described in Section 5.8 of NFPA 286.

2. The laminated product shall have a Class A, B, or C flame spread index and smoke developed index, based on the requirements of Table 803.13, in accordance with ASTM E84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E2579.

803.11 Facings or wood veneers intended to be applied on site over a wood substrate Facings or veneers intended to be applied on site over a wood substrate shall comply with one of the following:

1. The facing or veneer shall meet the criteria of Section 803.1.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, as described in Section 5.9 of NFPA 286.

2. The facing or veneer shall have a Class A, B or C flame spread index and smoke-developed index, based on the requirements of Table 803.13, in accordance with ASTM E 84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.

~~803.11~~ 803.13 Interior finish requirements based on group.

Interior wall and ceiling finish shall have a flame spread index not greater than that specified in Table 803.13 ~~803.11~~ for the group and location designated. *Interior wall and ceiling finish* materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.2.1, shall be permitted to be used where a Class A classification in accordance with ASTM E84or UL 723 is required.

TABLE 803.13 ~~803.11~~

Note: content of the Table remains unchanged.

Also: revise the section in Chapter 35 on referenced ASTM standards:

ASTM E2404, Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess Surface Burning Characteristics ~~(2013)~~ (2017)

ASTM E2579, Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics (2015)

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F8270

Date Submitted	12/14/2018	**Section**	803.3	**Proponent**	Paul Coats
Chapter	8	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265, 8267, 8269

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

1. **803.3 Heavy timber exemption.**

Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~ heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction.

Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~ heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fire-blocked as specified in Section 803.13.1.1.

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F7373

Date Submitted	11/20/2018	**Section**	907.2	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds a mandate for an automatic smoke detection system at battery rooms and for capacitor energy storage systems with a pointer to the FFPC.

Rationale

This proposal recognizes the importance of at least providing an automatic smoke detection system for battery rooms and capacitor energy storage systems. These systems are an emerging and rapidly growing segment of the electroindustry. This proposal also harmonizes the FBC-B with the FFPC (NFPA 1 and NFPA 101).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will increase the cost of compliance to building and property owners where they choose to install these energy systems.

Impact to industry relative to the cost of compliance with code

This proposed modification will increase the cost of compliance or impact industry where consumer choose to install these energy systems.

Impact to small business relative to the cost of compliance with code

This proposed modification will increase the cost of compliance or impact small business where they choose to install these energy systems.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by reducing the fire risk associated with these energy systems with the mandate for an automatic smoke detection system in compliance with the FFPC.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by ensuring these energy systems are adequately protected by a FFPC regulated automatic smoke detection system.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

~~[F] 907.2.23 Battery rooms. An automatic smoke detection system shall be installed in areas containing stationary storage battery systems with a liquid capacity of more than 50 gallons (189 L).~~

[F] 907.2.23 Battery rooms. An automatic smoke detection system shall be installed in areas containing stationary storage battery systems as required in Florida Fire Prevention Code.

[F] 907.2.24 Capacitor energy storage systems. An automatic smoke detection system shall be installed in areas containing capacitor energy storage systems as required by the Florida Fire Prevention Code.

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F7374

Date Submitted	11/20/2018	**Section**	907.1.2	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification revises the requirements for fire alarm shop drawings.

Rationale

This proposal deletes the laundry list of items that are required on to be provided on fire alarm shop drawings and provides a pointer to the NFPA 72 instead. The NFPA 72 has a comprehensive and complete list of requirements for shop drawings. This places the rules in one place instead of constantly trying to harmonize the FBC-B with the industry standard for fire alarm systems.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by providing a pointer to the industry standard for fire alarm systems in lieu of an incomplete and inaccurate list in the FBC-B.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by removing an incomplete and inaccurate list from the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

[F] 907.1.2 Fire alarm shop drawings Shop drawings for fire alarm systems shall be prepared in accordance with NFPA 72 and submitted for review and approval prior to system installation.

~~[F] 907.1.2 Fire alarm shop drawings. Shop drawings for fire alarm systems shall be submitted for review and approval prior to system installation, and shall include, but not be limited to, all of the following where applicable to the system being installed:~~

~~1. A floor plan that indicates the use of all rooms.~~

~~2. Locations of alarm-initiating devices.~~

~~3. Locations of alarm notification appliances, including candela ratings for visible alarm notification appliances.~~

~~4. Design minimum audibility level for occupant notification.~~

~~5. Location of fire alarm control unit, transponders and notification power supplies.~~

~~6. Annunciators.~~

~~7. Power connection.~~

~~8. Battery calculations.~~

~~9. Conductor type and sizes.~~

~~10. Voltage drop calculations.~~

~~11. Manufacturers' data sheets indicating model numbers and listing information for equipment, devices and materials.~~

~~12. Details of ceiling height and construction.~~

~~13. The interface of fire safety control functions.~~

~~14. Classification of the supervising station.~~

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F7376

Date Submitted	11/20/2018	**Section**	907.2.1	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds more criteria for when a manual fire alarm system is required in a Group A occupancy.

Rationale

This change would serve to increase the fire alarm requirement where the A occupancy is located on a level other than that of exit discharge to be at least as strenuous as that of a B occupancy, which has the same 100 occupant load criteria for such.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will increase the cost of construction where A occupancies meet the criteria established by the change and that cost is passed on to the building or property owner.

Impact to industry relative to the cost of compliance with code

This proposed modification will increase the cost of construction where A occupancies meet the criteria established by the change.

Impact to small business relative to the cost of compliance with code

This proposed modification will increase the cost of construction where A occupancies meet the criteria established by the change for a small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by increasing the criteria where a manual fire alarm system is required in Group A occupancies.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

[F] 907.2.1 Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more, or where the Group A occupant load is more than 100 persons above or below the lowest level of exit discharge. Group A occupancies not separated from one another in accordance with Section 707.3.10 shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

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F7377

Date Submitted	11/20/2018	**Section**	907.2.13.3	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds multiple-channel voice evacuation requirements for certain high-rise buildings.

Rationale

It's common policy within jurisdictions for high-rise buildings to evacuate the floor of alarm, the floor above and the floor or floors below the alarm floor. A fire alarm system that has multiple channels allows one area of the building to receive an evacuation message, while other areas of the building can be given other instructions. This proposal will harmonize the FBC-B with the FFPC (NFPA 1, NFPA 101).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will increase the cost of construction for those fire alarm notification systems that previously would have been allowed to be installed in high-rise buildings as a single-channel system.

Impact to industry relative to the cost of compliance with code

This proposed modification will increase the cost of construction for those fire alarm notification systems that previously would have been allowed to be installed in high-rise buildings as a single-channel system.

Impact to small business relative to the cost of compliance with code

This proposed modification will increase the cost of construction for those fire alarm notification systems that previously would have been allowed to be installed in high-rise buildings as a single-channel system.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by proving first responders and building owners the ability to proposer communicate emergency orders to occupants in certain high-rise buildings.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

[F] 907.2.13.3 Multiple-channel voice evacuation. In buildings with an occupied floor more than 120 feet (36576 mm) above the lowest level of fire department vehicle access, voice evacuation systems for high-rise buildings shall be multiple-channel systems.

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F7378

Date Submitted	11/20/2018	**Section**	907.5.2.2.4	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification consolidates "emergency voice/alarm communication captions" requirements into this Section.

Rationale

This modification is proposing to add existing language from IBC Section 1108.2.7.3 to this section. This proposal correlates the access provisions with Chapter 9 by adding the scoping language. This proposal further affords the fire official, building official and other users of the code to design and enforce in accordance with Chapter 9 where both fire alarm and emergency voice alarm communication systems provisions are found. Additionally, the provisions that are contained in IBC 1108.2.7.3 have not been found in the US DOJ access guidelines. Since Florida does not adopt IBC Chapter 11 and rely on the US DOJ access guidelines for accessibility, we are missing these provisions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

~~[F] 907.5.2.2.4 Emergency voice/alarm communication captions. Where stadiums, arenas and grandstands are required to caption audible public announcements in accordance with the Florida Building Code, Accessibility, the emergency/voice alarm communication system shall be captioned. Prerecorded or live emergency captions shall be from an approved location constantly attended by personnel trained to respond to an emergency.~~

F] 907.5.2.2.4 Emergency voice/alarm communication captions. Where stadiums, arenas and grandstands have 15,000 fixed seats or more and provide audible public announcements, the emergency/voice alarm communication system shall provide prerecorded or real-time captions. Prerecorded or live emergency captions shall be from an approved location constantly attended by personnel trained to respond to an emergency.

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F7379

Date Submitted	11/20/2018	**Section**	907.5.2.3	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification is a mostly editorial revision of the visible alarm requirements in I-1, R-1 and R-2 occupancy types.

Rationale

This proposal is an attempt to clarify specifically where the visible notification appliances shall be located in newly constructed Group R-1 and I-1 dwelling and sleeping units and make sure that visible alarm notification is provided such that timely notification to guests with hearing impairments will occur and will save construction costs and provide clear direction for designers, owners and installers for similar rules in R-2 buildings.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by clarifying rules of visible alarms in I-1, R-1, and R-2 occupancies.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by adding clarity to the requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

~~[F] 907.5.2.3.2 Groups I-1 and R-1. Group I-1 and R-1 dwelling units or sleeping units in accordance with Table 907.5.2.3.2 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system.~~

[F] 907.5.2.3.2 Groups I-1 and R-1. Habitable spaces in dwelling units and sleeping units in Group I-1 and R-1 occupancies in accordance with Table 907.5.2.3.2 shall be provided with visible alarm notification. Visible alarms shall be activated by the in-room smoke alarm and the building fire alarm system.

~~[F] 907.5.2.3.3 Group R-2. In Group R-2 occupancies required by Section 907 to have a fire alarm system, all dwelling units and sleeping units shall be provided with the capability to support visible alarm notification appliances in accordance with Chapter 10 of ICC A117.1. Such capability shall be permitted to include the potential for future interconnection of the building fire alarm system with the unit smoke alarms, replacement of audible appliances with combination audible/visible appliances, or future extension of the existing wiring from the unit smoke alarm locations to required locations for visible appliances.~~

[F] 907.5.2.3.3 Group R-2. In Group R-2 occupancies required by Section 907 to have a fire alarm system, each story that contains dwelling units and sleeping units shall be provided with the capability to support visible alarm notification appliances in accordance with Chapter 11 of ICC A117.1. Such capability shall accommodate wired or wireless equipment. The future capability shall include one of the following:

1. The interconnection of the building fire alarm system with the unit smoke alarms.

2. The replacement of audible appliances with combination audible/visible appliances.

3. The future extension of the existing wiring from the unit smoke alarm locations to required locations for visible appliances.

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F7383

Date Submitted	11/21/2018	**Section**	915	**Proponent**	Bryan Holland
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language Yes

Related Modifications

Summary of Modification

This proposed modification deletes all the CO alarm requirements in Section 908.8 and adds all the current CO alarm requirements of the 2018 IBC into an expanded Section 915.

Rationale

This proposed modification aligns the FBC-B with the 2018 IBC/IRC, NFPA 72/720, FBC-R, and manufacturer's installation instructions with regard to CO alarm requirements. The proposed language is much more complete, comprehensive, and includes all prescriptive details needed to properly locate CO alarms. The Section also includes criteria for CO detection systems as an alternative compliance method.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification simply clarifies and outlines the rules for CO alarms and detection systems that are already required by industry standards and other related codes and should not result in a change in cost of compliance.

Impact to industry relative to the cost of compliance with code

This proposed modification simply clarifies and outlines the rules for CO alarms and detection systems that are already required by industry standards and other related codes and should not result in a change in cost of compliance.

Impact to small business relative to the cost of compliance with code

This proposed modification simply clarifies and outlines the rules for CO alarms and detection systems that are already required by industry standards and other related codes and should not result in a change in cost of compliance.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by proving the most comprehensive and complete list of CO alarm and detection system requirements to the code to help mitigate the serious hazard associated with CO poisoning.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by adding all the prescriptive requirements for CO alarms and detection systems into one place in FBC-B.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

Alternate Language

1st Comment Period History

F7383-A2

Proponent Bryan Holland **Submitted** 2/1/2019 **Attachments** Yes

Rationale

This alternative language comment includes minor editorial revisions to the proposed modification to add clarity. This comment also adds a definition for "carbon monoxide source" and CO detection requirements into certain Group A, B and M occupancies with attached private garages.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This comment will not have a fiscal impact on the local code enforcement entity.

Impact to building and property owners relative to cost of compliance with code

This comment could increase the cost of compliance where the Group A, B, or M occupancy has an attached private garage and would now require CO detection.

Impact to industry relative to the cost of compliance with code

This comment adds cost to certain Group A, B, or M occupancies with an attached private garage.

Impact to Small Business relative to the cost of compliance with code

This proposed modification simply clarifies and outlines the rules for CO alarms and detection systems that are already required by industry standards and other related codes and should not result in a change in cost of compliance.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This comment will enhance the health, safety, and welfare of the general public by protecting occupants from the hazards of CO poisoning where a CO source exists.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This comment improves the code with more concise information and expanded requirements for CO detection where a CO hazard could exist.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This comment does not discriminate against materials, products, methods, or systems.

Does not degrade the effectiveness of the code

This comment enhances the code.

1st Comment Period History

F7383-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:

Carbon monoxide provisions of the 2017 FBC are consistent with section 553.885 FS.

~~908.8 Carbon monoxide protection. Every separate building or an addition to an existing building for which a permit for new construction is issued and having a fossil-fuel-burning heater or appliance, a fireplace, an attached garage, or other feature, fixture, or element that emits carbon monoxide as a byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet (3050 mm) of each room used for sleeping purposes in the new building or addition, or at such other locations as required by this code.~~

~~Exceptions:~~

~~1. An approved operational carbon monoxide detector shall only be required to be installed inside or directly outside of each room or area where a fossilfuel burning heater, engine or appliance is located within a hospital, inpatient hospice facility or skilled nursing home facility licensed by the Agency for Health Care Administration, or a new state correctional institution. The carbon monoxide detector shall be connected to the fire-alarm system of the hospital, inpatient hospice facility or nursing home facility as a supervisory signal.~~

~~2. This section shall not apply to existing buildings that are undergoing alterations or repairs unless the alteration is an addition as defined in Section 908.7.3.~~

~~908.8.1 Carbon monoxide alarm. The requirements of Section 908.8 shall be satisfied by providing for one of the following alarm installations:~~

~~1. A hard-wired carbon monoxide alarm.~~

~~2. A battery-powered carbon monoxide alarm.~~

~~3. A hard-wired combination carbon monoxide and smoke alarm.~~

~~4. A battery-powered combination carbon monoxide and smoke alarm.~~

~~908.8.2 Combination alarms. Combination smoke/carbon monoxide alarms shall be listed and labeled by a nationally recognized testing laboratory.~~

~~908.8.3 Addition shall mean an extension or increase in floor area, number of stories or height of a building or structure.SECTION 915~~

~~CARBON MONOXIDE DETECTION~~

~~RESERVED~~

SECTION 915

CARBON MONOXIDE DETECTION

[F] 915.1 General. Carbon monoxide detection shall be installed in new buildings in accordance with Sections 915.1.1 through 915.6. Carbon monoxide detection shall be installed in existing buildings in accordance with The Florida Fire Prevention Code.

[F] 915.1.1 Where required. Carbon monoxide detection shall be provided in Group I-1, I-2, I-4 and R occupancies and in classrooms in Group E occupancies in the locations specified in Section 915.2 where any of the conditions in Sections 915.1.2 through 915.1.6 exist.

[F] 915.1.2 Fuel-burning appliances and fuel-burning fireplaces. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms that contain a fuel-burning appliance or a fuel-burning fireplace.

[F] 915.1.3 Fuel burning, forced-air furnaces. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms served by a fuel-burning, forced-air furnace.

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Exception: Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms if a carbon monoxide detector is provided in the first room or area served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location.

[F] 915.1.4 Fuel-burning appliances outside of dwelling units, sleeping units and classrooms. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms located in buildings that contain fuel-burning appliances or fuel-burning fireplaces.

Exceptions:

1. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms without communicating openings between the fuel-burning appliance or fuel-burning fireplace and the dwelling unit, sleeping unit or classroom.

2. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms where a carbon monoxide detector is provided in one of the following locations:

2.1. In an approved location between the fuel-burning appliance or fuel-burning fire-place and the dwelling unit, sleeping unit or classroom.

2.2. On the ceiling of the room containing the fuel-burning appliance or fuel-burning fireplace.

[F] 915.1.5 Private garages. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms in buildings with attached private garages.

Exceptions:

1. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms without communicating openings between the private garage and the dwelling unit, sleeping unit or classroom.

2. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms located more than one story above or below a private garage.

3. Carbon monoxide detection shall not be required where the private garage connects to the building through an open-ended corridor.

4. Where a carbon monoxide detector is provided in an approved location between openings to a private garage and dwelling units, sleeping units or classrooms.

[F] 915.1.6 Exempt garages. For determining compliance with Section 915.1.5, an open parking garage complying with Section 406.5 or an enclosed parking garage complying with Section 406.6 shall not be considered a private garage.

[F] 915.2 Locations. Where required by Section 915.1.1, carbon monoxide detection shall be installed in the locations specified in Sections 915.2.1 through 915.2.3.

[F] 915.2.1 Dwelling units. Carbon monoxide detection shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, carbon monoxide detection shall be installed within the bedroom.

[F] 915.2.2 Sleeping units. Carbon monoxide detection shall be installed in sleeping units.

Exception: Carbon monoxide detection shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom does not contain a fuel-burning appliance and is not served by a forced air furnace.

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[F] 915.2.3 Group E occupancies. Carbon monoxide detectors shall be installed in classrooms in Group E occupancies. Carbon monoxide alarm signals shall be automatically transmitted to an on-site location that is staffed by school personnel.

Exception: Carbon monoxide alarm signals shall not be required to be automatically transmitted to an on-site location that is staffed by school personnel in Group E occupancies with an occupant load of 30 or less.

[F] 915.3 Carbon monoxide detection. Carbon monoxide detection required by Sections 915.1 through 915.2.3 shall be provided by carbon monoxide alarms complying with Section 915.4 or carbon monoxide detection systems complying with Section 915.5.

[F] 915.4 Carbon monoxide alarms. Carbon monoxide alarms shall comply with Sections 915.4.1 through 915.4.4.

[F] 915.4.1 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exception: Where installed in buildings without commercial power, battery-powered carbon monoxide alarms shall be an acceptable alternative.

[F] 915.4.2 Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034.

[F] 915.4.3 Locations. Carbon monoxide alarms shall only be installed in dwelling units and in sleeping units. They shall not be installed in locations where the code requires carbon monoxide detectors to be used.

[F] 915.4.4 Combination alarms. Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

[F] 915.5 Carbon monoxide detection systems. Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections 915.5.1 through 915.5.3.

[F] 915.5.1 General. Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

[F] 915.5.2 Locations. Carbon monoxide detectors shall be installed in the locations specified in Section 915.2. These locations supersede the locations specified in NFPA 720.

[F] 915.5.3 Combination detectors. Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided that they are listed in accordance with UL 2075 and UL 268.

[F] 915.6 Maintenance. Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with the Florida Fire Prevention Code.

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SECTION 915

CARBON MONOXIDE DETECTION

[F] 915.1 General. Carbon monoxide detection shall be installed in new buildings in accordance with Sections 915.1.1 through 915.6. Carbon monoxide detection shall be installed in existing buildings in accordance with the Florida Fire Prevention Code.

[F] 915.1.1 Where required. Carbon monoxide detection shall be provided in Group I-1, I-2, I-4 and R occupancies and in classrooms in Group E occupancies in the locations specified in Section 915.2 where any of the conditions in Sections 915.1.2 through 915.1.6 exist. Carbon monoxide detection shall be provided in Group A, B and M occupancies as required by Section 915.2.4 in locations specified in Section 915.2.4.1.

[F] 915.1.2 Fuel-burning appliances and fuel-burning fireplaces. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms that contain a fuel-burning appliance or a fuel-burning fireplace.

[F] 915.1.3 Forced-air furnaces. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms served by a fuel-burning, forced-air furnace.

Exception: Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms if carbon monoxide detection is provided in the first room or area served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location.

[F] 915.1.4 Fuel-burning appliances outside of dwelling units, sleeping units and classrooms. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms located in buildings that contain fuel-burning appliances or fuel-burning fireplaces.

Exceptions:

1. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms where there are no communicating openings between the fuel-burning appliance or fuel-burning fireplace and the dwelling unit, sleeping unit or classroom.

2. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms where carbon monoxide detection is provided in one of the following locations:

2.1. In an approved location between the fuel-burning appliance or fuel-burning fireplace and the dwelling unit, sleeping unit or classroom.

2.2. On the ceiling of the room containing the fuel-burning appliance or fuel-burning fireplace.

[F] 915.1.5 Private garages. Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms in buildings with attached private garages.

Exceptions:

1. Carbon monoxide detection shall not be required where there are no communicating openings between the private garage and the dwelling unit, sleeping unit or classroom.

2. Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms located more than one story above or below a private garage.

3. Carbon monoxide detection shall not be required where the private garage connects to the building through an open-ended corridor.

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4. Where carbon monoxide detection is provided in an approved location between openings to a private garage and dwelling units, sleeping units or classrooms, carbon monoxide detection shall not be required in the dwelling units, sleeping units or classrooms.

[F] 915.1.6 Exempt garages. For determining compliance with Section 915.1.5, an open parking garage complying with Section 406.5 or an enclosed parking garage complying with Section 406.6 shall not be considered a private garage.

[F] 915.2 Locations. Where required by Section 915.1.1, carbon monoxide detection shall be installed in the locations specified in Sections 915.2.1 through 915.2.3.

[F] 915.2.1 Dwelling units. Carbon monoxide detection shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, carbon monoxide detection shall be installed within the bedroom.

[F] 915.2.2 Sleeping units. Carbon monoxide detection shall be installed in sleeping units.

Exception: Carbon monoxide detection shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom does not contain a fuel-burning appliance and is not served by a forced air furnace.

[F] 915.2.3 Group E occupancies. Carbon monoxide detection shall be installed in classrooms in Group E occupancies. Carbon monoxide alarm signals shall be automatically transmitted to an on-site location that is staffed by school personnel.

Exception: Carbon monoxide alarm signals shall not be required to be automatically transmitted to an on-site location that is staffed by school personnel in Group E occupancies with an occupant load of 30 or less.

[F] 915.2.4 Group A, B and M occupancies. Carbon monoxide detectors shall be installed in Group A, Group B and Group M occupancies that contain a carbon monoxide source.

Exceptions:

1. Carbon monoxide detection is not required in Group A occupancies with an occupant load of less than 300.

2. Carbon monoxide detection is not required in Group B occupancies with an occupant load of less than 500.

3. Carbon monoxide detection is not required in Group M occupancies with an occupant load of less than 500.

[F] 915.2.4.1 Installation Location.

915.2.4.1.1 Carbon monoxide detectors shall be installed on the ceiling in the same room as a permanently installed carbon monoxide source or in an approved location adjacent to the fuel-burning appliance.

915.2.4.1.2 Carbon monoxide detectors shall be installed in each room or area served by a forced-air furnace that relies on the combustion of a fossil fuel and re-circulates air.

Exception: Carbon monoxide detectors shall not be required in each room or area provided that a detector is installed in the first room or area served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location.

915.2.4.1.3 Carbon monoxide detectors shall be provided in buildings classified as Group A, B or M occupancies with attached private garages.

Exceptions:

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1. Carbon monoxide detectors shall not be required where there are no communicating openings between the public parking garage and the building.

2. Carbon monoxide detectors shall not be required in the building located more than one story above or below a public parking garage.

3. Carbon monoxide detectors shall not be required where the public parking garage connects to the building through an open-ended corridor.

4. Where carbon monoxide detectors are provided in an approved location between openings to a public parking garage and the building, carbon monoxide detection shall not be required in the building.

915.2.4.1.4 Exempt garages. For determining compliance with Section 915.1.5, an open parking garage complying with Section 406.5 of the Florida Building Code, Building or an enclosed parking garage complying with Section 406.6 of the Florida Building Code, Building shall not be considered a private garage.

[F] 915.3 Detection equipment. Carbon monoxide detection required by Sections 915.1 through 915.2.3 shall be provided by carbon monoxide alarms complying with Section 915.4 or carbon monoxide detection systems complying with Section 915.5. Carbon monoxide detection required by Section 915.2.4 shall be provided by carbon monoxide detectors or combination detectors complying with Section 915.5.

[F] 915.4 Carbon monoxide alarms. Carbon monoxide alarms shall comply with Sections 915.4.1 through 915.4.3.

[F] 915.4.1 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exception: Where installed in buildings without commercial power, battery-powered carbon monoxide alarms shall be an acceptable alternative.

[F] 915.4.2 Listings. Carbon monoxide alarms shall be listed in accordance with ANSI/UL 2034.

[F] 915.4.3 Combination alarms. Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with ANSI/UL 2034 and ANSI/UL 217.

[F] 915.5 Carbon monoxide detection systems. Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections 915.5.1 through 915.5.3.

[F] 915.5.1 General. Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with ANSI/UL 2075.

[F] 915.5.2 Locations. Carbon monoxide detectors shall be installed in the locations specified in Section 915.2. These locations supersede the locations specified in NFPA 720.

[F] 915.5.3 Combination detectors. Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided they are listed in accordance with ANSI/UL 2075 and ANSI/UL 268.

[F] 915.4 Control Unit. Where carbon monoxide detectors are installed in accordance with the Code, they shall be connected to a control unit in accordance with NFPA 720 and NFPA 72.

[F] 915.5 Power Source. Combination smoke/carbon monoxide detectors shall receive their power source in accordance with NFPA 72.

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[F] 915.6 Maintenance. Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with the Florida Fire Prevention Code.

SECTION 202 DEFINITIONS

CARBON MONOXIDE SOURCE. Carbon monoxide source means any machine or equipment that operates through the combustion of fossil fuel, a fireplace or an attached, enclosed garage.

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F7859

Date Submitted	12/10/2018	**Section**	903	**Proponent**	Jon Roberts
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Provides clarification for the section related to stories without openings.

Rationale

This code change is intended to provide language that clarifies the intended requirements by removing the double negative that was found in the current code section.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This provides clarity making enforcement easier.

Impact to building and property owners relative to cost of compliance with code

This has no impact to property owners relative to cost as it only provides clarity on a requirement found in the code.

Impact to industry relative to the cost of compliance with code

This has no impact relative to cost as it only provides clarity on a requirement found in the code.

Impact to small business relative to the cost of compliance with code

This has no impact relative to cost as it only provides clarity on a requirement found in the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This provides clarity on a requirement found in the code by removing unnecessary language thereby making code enforcement easier and ensuring safety and welfare.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This strengthens the code by providing a better method for understanding the requirements

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate in anyway.

Does not degrade the effectiveness of the code

This does not degrade the code, but in fact makes it easier to understand and enforce.

903.2.11.1 Stories without openings.

An automatic sprinkler system shall be installed throughout all stories, including basements, of all buildings where the floor area exceeds 1,500 square feet (139.4 m2) and where ~~there is~~ the story does not ~~provided~~ comply with the following criteria for exterior wall openings:

1. Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1011 or an outside ramp complying with Section 1012. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not fewer exceed 50 feet (15 240 mm).

2. Openings entirely above the adjoining ground level totaling not less than 20 square feet (1.86 m2) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). The height of the ~~following types bottom of exterior wall openings:~~

~~2.1. Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1011 or an outside ramp complying with Section 1012. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm).~~

~~2.2. Openings entirely above the adjoining ground level totaling not less than 20 square feet (1.86 m2) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm).~~ ~~The height of the~~ bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.

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F7861

Date Submitted	12/10/2018	**Section**	904	**Proponent**	Jon Roberts
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

906

Summary of Modification

This removes the language pertaining to portable fire extinguishers from section 904 which is related to Alternative Automatic Fire-Extinguishing Systems and relocates that language to section 906 which pertains to portable extinguishers.

Rationale

The portable fire extinguishers requirements are not in the correct section, which is section 906 entitled Portable Fire Extinguishers. This proposal corrects the problem by moving the requirements in 904.13.2 to 906.1 and deleting section 904.13.2. In addition it details the type of portable extinguisher that is required while still maintaining the required direction to code users over to the fire code for all other requirements such as sizing installation and requirements.
906.4 was

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will aid the inspector when dealing with cooking installations, but does not provide any new requirements, it only puts the requirements in the proper section.

Impact to building and property owners relative to cost of compliance with code

This will not have an impact on cost as this is clarification only and is not adding new requirements.

Impact to industry relative to the cost of compliance with code

This will not have an impact on cost as this is clarification only and is not adding new requirements.

Impact to small business relative to the cost of compliance with code

This will not have an impact on cost as this is clarification only and is not adding new requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This will ensure safety by placing the requirements for extinguishers in the proper section.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This improves the code by placing the requirements for extinguishers in the proper section.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate in anyway as it only moves requirements from one section to another.

Does not degrade the effectiveness of the code

This does not degrade the code in anyway as it only moves requirements from one section to another.

~~**904.13.2 Portable fire extinguishers for domestic cooking equipment in Group I-2 Condition 1.**~~

~~A portable fire extinguisher complying with Section 906 shall be installed within a 30-foot (9144 mm) distance of travel from domestic cooking appliances.~~

906.1 Where required.

Portable fire extinguishers shall be installed in all of the following locations:

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies. Exception: In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1- A:10-B:C.

2. Within 30 feet (9144 mm) distance of travel from commercial cooking equipment, and from domestic cooking equipment in Group I-2 Condition 1.

3. In areas where flammable or combustible liquids are stored, used or dispensed.

4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3315.1.

5. Where required by the sections indicated in Table 906.1.

6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.

906.4 Cooking ~~grease~~ equipment fires.

Fire extinguishers provided for the protection of cooking ~~grease fires~~ equipment shall be of an approved type compatible with the automatic fire extinguishing system agent. Cooking equipment involving solid fuels or vegetable or animal oils and fats shall be protected by a Class K rated portable extinguisher ~~and~~ in accordance withthe Florida Fire Prevention Code.

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F8059

Date Submitted	12/13/2018	**Section**	901.6.1	**Proponent**	George Wiggins (BOAF)
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

None

Summary of Modification

This proposal corrects an exception made in a previous code edition to prevent having a conflict between this section and Section 903.4 in order to be consistent.

Rationale

This proposal corrects an exception made in a previous code edition to prevent having a conflict between this section and Section 903.4 in order to be consistent.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Making this section consistent with Section 903.4 fulfills a connection health, safety & welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by removing a conflict.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate by providing consistency of a code provision.

Does not degrade the effectiveness of the code

Does not degrade effectiveness by providing consistency of a code provision.

Automatic sprinkler systems. *Automatic sprinkler systems* shall be monitored byan

approved supervising station.

Exceptions:

1. A supervising station is not required for *automatic sprinkler systems* protecting one and two familydwellings.

2. Limited area systems ~~serving fewer than 20 sprinklers~~ in accordance with Section 903.3.8.

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F7213

Date Submitted	11/27/2018	**Section**	1015.8	**Proponent**	Scott McAdam
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

FBC, Building 1015.8 window fall protection 36 inch sill height change to 24 inches to match FBC, Residential R312.2. the safety issue should be the same and not related to occupancy, i.e. multi family or single family.

Rationale

Fall protection for occupancy types that fall under the Building code and the residential code need to be provided the same safety criteria. If fall protection is required for a single family dwelling regulated by the Residential Code for sill height less than 24 inches then an apartment or condominium or other occupancy type regulated under the Building Code should also be 24 inches not 36 inches. These are all residential units with the same types of occupants. A child in a single family dwelling should be afforded the same level of safety if living in any other occupancy type. Both codes should require the same criteria. If testing showed a safety issue with 24 inches than the 36 inches in the Building Code needs to also be 24 inches.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact just height change for fall protection to be consistent in both Building and Residential Codes.

Impact to building and property owners relative to cost of compliance with code

No impact just height change for fall protection to be consistent in both Building and Residential Codes.

Impact to industry relative to the cost of compliance with code

No impact just height change for fall protection to be consistent in both Building and Residential Codes.

Impact to small business relative to the cost of compliance with code

No impact just height change for fall protection to be consistent in both Building and Residential Codes.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Fall protection for windows.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens code by being consistent in both Building and Residential Codes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

FBC, Building 1015.8 Window openings.

Windows in Group R-2 and R-3 buildings including *dwelling units*, where the top of the sill of an operable window opening is located less than ~~36~~ 24 inches above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with one of the following:

1. 1.Operable windows where the top of the sill of the opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below and that are provided with window fall prevention devices that comply with ASTM F2006.
2. 2.Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position.
3. 3.Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090.
4. 4.Operable windows that are provided with window opening control devices that comply with Section 1015.8.1.

1015.8.1 Window opening control devices.

Window opening control devices shall comply with ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2.

FBC, Residential R312.2 Window fall protection.

Window fall protection shall be provided in accordance with Sections R312.2.1 and R312.2.2.

R312.2.1Window sills.

In dwelling units, where the top of the sill of an operable window opening is located less than 24 inches (610 mm) above the finished floor and greater than 72 inches (1829 mm) above the finished *grade* or other surface below on the exterior of the building, the operable window shall comply with one of the following:

1. 1.Operable windows with openings that will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening where the opening is in its largest opened position.
2. 2.Operable windows that are provided with window fall prevention devices that comply with ASTM F2090.
3. 3.Operable windows that are provided with window opening control devices that comply with Section R312.2.2.

R312.2.2Window opening control devices.

Window opening control devices shall comply with ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit to less than the area required by Section R310.2.1.

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F7333

Date Submitted	11/20/2018	**Section**	1006.3	**Proponent**	Ann Russo3
Chapter	10	**Affects HVHZ**	Yes	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

None

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

: Section 1006.3.1 currently references "independent" exits. Independent can be a vague or judgmental term. The proposed "separate and distinct" language is more specific. Also, that terminology is currently used in the definition of common path of egress travel to identify a point where two exits or access to exits would be required.
Additionally, Section 1006.3 has been modified to include the qualifying requirement of "separate and distinct" as well. Conceivably, if both the entrance to an interior exit stairway at one story and the entrance to the same interior exit stairway at an adjacent story are both within the prescribed exit access travel distance limitations, it could be interpreted that the required number of exits requirement has been satisfied because the two entrances are "independent." The separate and distinct terminology would require that there be a second formal exit available within established exit access travel limitations.
This proposal intends to amplify separate exit requirements. It is also intended to clarify that although required exits from a given story may be located at different building levels, the same interior exit stairway may not serve as satisfying multiple exit requirements. Obviously, if such interior exit stairway was compromised, the opportunity for a true alternate exit would be lost. Approval of this proposal increases occupant safety within the means of egress system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

this proposal provides clarity to egress requirements. It is intended to clarify the the number of exit provisions currently required.

Impact to building and property owners relative to cost of compliance with code

This will not increase the cost of construction. It merely clarifies the intent of the code and makes it more understandable for application.

Impact to industry relative to the cost of compliance with code

This will not increase the cost of construction. It merely clarifies the intent of the code and makes it more understandable for application.

Impact to small business relative to the cost of compliance with code

This will not increase the cost of construction. It merely clarifies the intent of the code and makes it more understandable for application.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The purpose of egress is safety. The Code is not concerned with how we get people into a building, that is the duty if the designer. The Code is responsible to get people out. This clarification provides information related to the number of exit provisions in clear and understandable language.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does not strengthen the Code, it provides clarity of an existing rule that will assist in better, more consistent and easier to understand enforcement.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal makes no mention of the specific materials as they are already used and in place. No change of materials is proposed.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by providing clarity of the requirement

1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. The *path of egress travel* to an *exit* shall not pass through more than one adjacent *story*.

1006.3.1 Egress based on occupant load. Each *story* and occupied roof shall have the minimum number of ~~independent~~ separate and distinct *exits*, or access to *exits*, as specified in Table 1006.3.1. A single *exit* or access to a single *exit* shall be permitted in accordance with Section 1006.3.2. The required number of *exits*, or *exit access stairways* or *ramps* providing access to *exits*, from any *story* or occupied roof shall be maintained until arrival at the *exit discharge* or a *public way*.

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Code Change No: E25-15

Original Proposal

Section(s): 1006.3, 1006.3.1; (IFC[BE] 1006.3, 1006.3.1)

Proponent: Gregory Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com); Stephen Thomas (sthomas@coloradocode.net)

Revise as follows:

1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. Where an exit access stairway provides access to an exit at another story, a single interior or exterior exit stairway having entrances at each story shall not serve as both required exits for a single story. The *path of egress travel* to an *exit* shall not pass through more than one adjacent *story*.

1006.3.1 Egress based on occupant load. Each *story* and occupied roof shall have the minimum number of ~~independent~~ separate and distinct *exits*, or access to *exits*, as specified in Table 1006.3.1. A single *exit* or access to a single *exit* shall be permitted in accordance with Section 1006.3.2. The required number of *exits*, or *exit access stairways* or *ramps* providing access to *exits*, from any *story* or occupied roof shall be maintained until arrival at the *exit discharge* or a *public way*.

Reason: Section 1006.3.1 currently references "independent" exits. Independent can be a vague or judgmental term. The proposed "separate and distinct" language is more specific. Also, that terminology is currently used in the definition of common path of egress travel to identify a point where two exits or access to exits would be required.

Additionally, Section 1006.3 has been modified to include the qualifying requirement of "separate and distinct" as well. Conceivably, if both the entrance to an interior exit stairway at one story and the entrance to the same interior exit stairway at an adjacent story are both within the prescribed exit access travel distance limitations, it could be interpreted that the required number of exits requirement has been satisfied because the two entrances are "independent." To clarify the intent, a sentence has been added stating that a single interior exit stairway cannot serve as both exits from a given story. The separate and distinct terminology would require that there be a second formal exit available within established exit access travel limitations.

This proposal intends to amplify separate exit requirements. It is also intended to clarify that although required exits from a given story may be located at different building levels, the same interior exit stairway may not serve as satisfying multiple exit requirements. Obviously, if such interior exit stairway was compromised, the opportunity for a true alternate exit would be lost. Approval of this proposal increases occupant safety within the means of egress system.

Cost Impact: Will not increase the cost of construction
This proposal is intended to clarify current numbers of exits provisions.

Staff note: There is a published errata to Section 1006.3 and 1006.3.1. The errata is incorporated into this proposal as existing text.

Report of Committee Action Hearings

Committee Action: **Approved as Modified**

Modify proposal as follows:

1006.3 Egress from stories or occupied roofs. The means of egress system serving any story or occupied roof shall be provided with the number of separate and distinct exits or access to exits based on the aggregate occupant load served in accordance with this section. ~~Where an exit access stairway provides access to an exit at another story, a single interior or exterior exit stairway having entrances at each story shall not serve as both required exits for a sing story.~~ The path of egress travel to an exit shall not pass through more than one adjacent story.

Committee Reason: The modification is to delete the new sentence. This new sentence is commentary language and is not needed in code text.

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Date Submitted	11/20/2018	**Section**	1026.4	**Proponent**	Ann Russo3
Chapter	10	**Affects HVHZ**	Yes	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

The proposed language clarifies requirement for when the actual occupant load is less than the capacity of the exit. This reflects actual conditions.

Rationale

If the total occupant load of the compartment egressing through the horizontal exit is less than the capacity of the horizontal exit door, the maximum capacity of the refuge area should not be more than the legal capacity of the compartment egressing.
For example, a standard 36-inch-wide door has a clear width of 33 inches. At 0.20" per occupant, the capacity of the door is 165 occupants. For sprinklered buildings at 0.15" per occupant, the load is even greater at 220 occupants. So, if the total occupant load on one side of the horizontal exit door is less than 165 for a nonsprinklered building, or less than 220 occupants for a sprinklered building, then the refuge area on the other side should only be required to accommodate the design occupant load and not the capacity of the door in the horizontal exit.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This change will impact enforcement from the standpoint of only requiring these areas to be sized based on the the load they are capable of handling based on the entrance to them. Complete explanation is provided in the rationale statement.

Impact to building and property owners relative to cost of compliance with code

The proposed change will actually relax the requirement. Thus, building owners can maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have. No increase

Impact to industry relative to the cost of compliance with code

The proposed change will actually relax the requirement. Thus, building owners can maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have. No increase

Impact to small business relative to the cost of compliance with code

The proposed change will actually relax the requirement. Thus, building owners can maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have. No increase

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Building owners can maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have without reducing safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code. The proposed change relaxes the requirement. Thus, building owners can maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No materials, methods, products or systems are proposed to be changed.

Does not degrade the effectiveness of the code

Egress doors are sized based on accepted science. This proposal used the code requirement for access to size the other components, thus, not degrading effectiveness.

1026.4 Refuge area. The refuge area of a *horizontal exit* shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original *occupant load* of the refuge area plus the *occupant load* anticipated from the adjoining compartment. The anticipated *occupant load* from the adjoining compartment shall be based on the capacity of the *horizontal exit doors* entering the refuge area, but not more than the total occupant load of theadjoining compartment.

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Code Change No: E123-15

Original Proposal

Section: 1026.4; (IFC[BE] 1026.4)

Proponent: Ronald Geren, RLGA Technical Services, LLC, representing Self (ron@specsandcodes.com)

Revise as follows:

1026.4 Refuge area. The refuge area of a *horizontal exit* shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original *occupant load* of the refuge area plus the *occupant load* anticipated from the adjoining compartment. The anticipated *occupant load* from the adjoining compartment shall be based on the capacity of the *horizontal exit doors* entering the refuge area, but not more than the total occupant load of the adjoining compartment.

Reason: If the total occupant load of the compartment egressing through the horizontal exit is less than the capacity of the horizontal exit door, the maximum capacity of the refuge area should not be more than the legal capacity of the compartment egressing.

For example, a standard 36-inch-wide door has a clear width of 33 inches. At 0.20" per occupant, the capacity of the door is 165 occupants. For sprinklered buildings at 0.15" per occupant, the load is even greater at 220 occupants. So, if the total occupant load on one side of the horizontal exit door is less than 165 for a nonsprinklered building, or less than 220 occupants for a sprinklered building, then the refuge area on the other side should only be required to accommodate the design occupant load and not the capacity of the door in the horizontal exit.

Cost Impact: Will not increase the cost of construction
The proposed change will actually relax the requirement. Thus, building owners can maximize the use of the floor area for their buildings without having to make floor areas usuable for refuge areas in order to accommodate more occupants than the area is legally permitted to have.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The proposed language clarifies requirement for when the actual occupant load is less than the capacity of the exit. This reflects actual conditions. This proposal needs to be coordinated with the language approved in E6-15 as modified.

Assembly Action: **None**

Final Hearing Results

E123-15 **AS**

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F7354

Date Submitted	11/21/2018	**Section**	1010.3	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1010.3.2 (New), 1010.3.1, 1010.3.2; (IFC[BE] 1010.3, 1010.3.2 (New), 1010.3.1, 1010.3.2)

Summary of Modification

Manufacturers of turnstile devices have expanded into the security access control market and currently have products that have physical barrier leaves that restrict access into and out of buildings.

Rationale

Reason: Manufacturers of turnstile devices have expanded into the security access control market and currently have products that have physical barrier leaves that restrict access into and out of buildings. These devices can vary in height and sophistication to address building security concerns that may not meet safety requirements related to the means of egress. Typically, these turnstile devices are located at building entrances and elevator lobbies. The current requirements for turnstiles apply historically to the "three arm" waist-high turnstiles for entertainment or transportation venues and do not apply to the new installations. Currently, the building official is left to evaluate these new modern turnstiles to determine compliance with the egress requirements in the IBC. The intent of the revision is to provide guidance on evaluating these new modern turnstiles. Turnstiles on the market can be as narrow as 22 inches. For turnstiles that are less than 32 inches, there are additional capacity issues that need to be considered. The fail safe provisions for overriding the turnstile access restrictions are derived from existing code provisions (e.g., delayed egress locks and forces to open doors).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

These revisions will provide the Building Official guidance on evaluating these new modern turnstiles without going through the alternative material, mean and method process.

Impact to building and property owners relative to cost of compliance with code

Minimal - the code change will probably increase construction costs due to these new requirements; HOWEVER, the new requirements will enhance overall building safety when these new security access turnstiles are installed in buildings.

Impact to industry relative to the cost of compliance with code

Minimal - the code change will probably increase construction costs due to these new requirements; HOWEVER, the new requirements will enhance overall building safety when these new security access turnstiles are installed in buildings.

Impact to small business relative to the cost of compliance with code

Minimal - the code change will probably increase construction costs due to these new requirements; HOWEVER, the new requirements will enhance overall building safety when these new security access turnstiles are installed in buildings.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This will enhance the overall building safety when these new security turnstiles are installed.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Makes code compliance easier for design professionals and Building Officials to understand and enforce without going through the alternative process.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This will allow new security turnstiles that meets or exceeds the safety requirements to be installed without going through the alternative process.

Does not degrade the effectiveness of the code

This will enhance the overall building safety when these new security turnstiles are installed.

Revise as follows:

1010.3 Turnstiles and Similar Devices. Turnstiles or similar devices that restrict travel to one direction shall not be placed so as to obstruct any required *means of egress*, except where permitted in accordance with Sections1010.3.1,1010.3.2and1010.3.3.

~~**Exception:**~~**1010.3.1 Capacity.** Each turnstile or similar device shall be credited with a capacity based on not more than a 50-person *occupant load* where all of the following provisions are met:

1. Each device shall turn free in the direction of egress travel when primary power is lost and on the manual release by an employee in the area.
2. Such devices are not given credit for more than 50 percent of the required egress capacity or width.
3. Each device is not more than 39 inches (991 mm) high.
4. Each device has not less than $16^{1}/_{2}$ inches (419 mm) clear width at and below a height of 39 inches (991 mm) and not less than 22 inches (559 mm) clear width at heights above 39 inches (991 mm).

1010.3.1.1 Clearwidth. Where located as part of an *accessible route*, turnstiles shall have not less than 36 inches (914 mm) clear at and below a height of 34 inches (864 mm), not less than 32 inches (813 mm) clear width between 34 inches (864 mm) and 80 inches (2032 mm) and shall consist of a mechanism other than a revolving device.

Add new text as follows:

1010.3.2 Security access turnstiles. Security access turnstiles that inhibit travel in the direction of egress utilizing a physical barrier shall be permitted to be considered as a component of the means of egress, provided that all of the following criteria are met:

1. The building is protected throughout by an approved supervised automatic sprinkler system in accordance with Section 903.3.1.1.
2. Each security access turnstile lane configuration has a minimum clear passage width of 22 inches (560 mm).
3. Any security access turnstile lane configuration providing clear passage width of less than 32 inches (810 mm) shall be credited with a maximum egress capacity of 50 persons.
4. Any security access turnstile lane configuration providing a clear passage width of 32 inches (810 mm) or more shall be credited with a maximum egress capacity as calculated in accordance with Section 1005.
5. Each secured physical barrier shall automatically retract or swing to unobstructed open position in the direction of egress, under each of the following conditions:
   5.1 Upon loss of power to the turnstile or any part of the access control system that secures the physical barrier.
   5.2 Upon actuation of a readily accessible and clearly identified manual release device that results in direct interruption of power to each secured physical barrier, remains in the open position for not less than 30 seconds. The manual release device shall be positioned at one of the following locations:
      5.2.1 The manual release device is located on the egress side of each security access turnstile lane.
      5.2.2 The manual release device is located at an approved location where it can be actuated by an employee assigned to the area at all times that the building is occupied.
   5.3 Upon actuation of the building fire alarm system, if provided, the physical barrier remains in the open position until the fire alarm system is manually reset.
      Exception: Actuation of manual fire alarm boxes.
   5.4 Upon actuation of the building automatic sprinkler of fire detection system, and for which the physical barrier remains in the open position until the fire alarm system is manually reset.

Revise as follows:

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7354_TextOfModification_1.png

~~1010.3.1~~1010.3.3 **Highturnstile.** Turnstiles more than 39 inches (991 mm) high shall meet the requirements for revolving doors or the requirements of Section 1010.3.2 for security access turnstiles.

~~1010.3.2~~1010.3.4 **Additional door.** Where serving an *occupant load* greater than 300, each turnstile that is not portable shall have a side-hinged swinging door that conforms to Section 1010.1 within 50 feet (15240 mm).

Exception: A side-hinged swinging door is not required at security access turnstiles that comply with Section 1010.3.2.

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Date Submitted	11/20/2018	**Section**	1013.6.3	**Proponent**	Bryan Holland
Chapter	10	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments	**No**	**Alternate Language**	**No**

Related Modifications

Summary of Modification

This proposed modification simply moves a rule in the exception up to the main charging paragraph of the Section.

Rationale

This proposed modification places the rule that is currently in Exception 2 up into the main charging paragraph for added clarity to the Section. The requirement is less of an exception to the main rule and should be viewed as a supplement to the main rule.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

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Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

1013.6.3 Power source. Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27. Group I-2, Condition 2 exit sign illumination shall not be provided by unit equipment batteries only.

Exceptions:

1. Approved exit sign illumination means that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

~~2. Group I-2 Condition 2 exit sign illumination shall not be provided by unit equipment battery only.~~

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7360_TextOfModification_1.png

Date Submitted	11/27/2018	**Section**	1004.3	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Add verbiage to the current language of the code in order to help the Fire Marshal verify the posting of appropriate occupancy, occupant load and "intended configuration" of the assembly rooms or spaces.

Rationale

Many jurisdictions have started to require multiple postings for rooms having multiple configurations. Unfortunately that is not currently in the code and may become confusing. By adding for the 'intended configuration' in the code it would confirm that the code enforcement official could require that correct signage was posted.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No negative impact to local entity relative to enforcement of code.

Impact to building and property owners relative to cost of compliance with code

No negative impact to local entity relative to enforcement of code.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of compliance with the code.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal will simply provide clarity for application of the code and improve the overall health, safety and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will provide clarity and improve the application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the effectiveness of the code.

Revise as follows:

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space, for the intended configurations. Posted signs shall be an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7471_TextOfModification_1.png

F7472

Date Submitted	11/27/2018	**Section**	1004.5	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Occupied roof will also need to meet the means of egress requirements.

Rationale

This proposal will add the language "occupied roofs" to this section which will allow the code user to understand that occupied roofs which are open to the sky will also need to meet means of egress requirements.
This proposal will also help tie this section to the language that already exist in Section 1006.3.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will help eliminate confusion among code officials and designers on means of egress requirements for occupied roofs.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost of compliance with code.

Impact to industry relative to the cost of compliance with code

Will not increase cost of compliance with code.

Impact to small business relative to the cost of compliance with code

Will not increase cost of compliance with code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal is only to help clarify the existing code requirements found in Section 1006.3.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal is only to help clarify the existing code requirements found in Section 1006.3.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal is only to help clarify the existing code requirements found in Section 1006.3.

Does not degrade the effectiveness of the code

This proposal is only to help clarify the existing code requirements found in Section 1006.3.

Revise as follows:

1004.5 Outdoor areas. *Yards*, patios, occupied roofs, *courts* and similar outdoor areas accessible to and usable by the building occupants shall be provided with *means of egress* as required by this chapter. The *occupant load* of such outdoor areas shall be assigned by the *building official* in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, *means of egress* requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one *means of egress*.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7472_TextOfModification_1.png

Date Submitted	11/28/2018	**Section**	1006.2.1	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

1006.3

Summary of Modification

This modification is to improve the consistency in the determination and application of fundamental FBC means of egress provisions.

Rationale

This proposal is intended to enhance the functionality of these requirements by placing them in context with the applicable means of egress design requirements. For example, Section 1004.1.1.1 states, "Design of egress path capacity shall be based on the cumulative portion of the occupant loads of all rooms, areas or spaces to that point along the path of egress travel." This proposal places the same requirement at Section 1006.2.1 in the context of using capacity to determine the required number of exits or access to exits.

A new Exception 1 to Section 1006.2.1 has been added. It is a logical concern. Literally interpreted, a building with an occupant load of 4,000 and having four required exits with one of those exits having a foyer, lobby, vestibule or similar space would require four exits from such space based on the cumulative occupant load of 1,000. The number of exits from such space would be based on the occupant load of the space; however, the capacity of that exit(s) would be based on the cumulative occupant load served. Perhaps the most important feature of the 6th Edition code change was that it clarified that cumulative occupant loads are not considered when calculating the required number of exits or access to exits serving an adjacent story. An exception clarifies that occupant loads from isolated mezzanines will be considered in determining the number of required exits from the adjacent story.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Approval of this proposal will improve the consistency in the determination and application of fundamental FBC means of egress provisions.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost.

Impact to industry relative to the cost of compliance with code

Will not increase cost.

Impact to small business relative to the cost of compliance with code

Will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification will simply provide clarification of current requirements and will help designers and code officials in the consistent enforcement of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification will simply provide clarification of current requirements and will not weaken the current provisions of the code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification will simply provide clarification of current requirements and will not discriminate against materials, product, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This modification will simply provide clarification of current requirements and will improve the effectiveness of code enforcement.

Revise as follows:

1006.2.1 Egress based on occupant load and common path of egress travel distance.

Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

Exceptions:

1. ~~Reserved.~~ The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative *occupant loads.*
2. Care suites in Group I-2 occupancies complying with Section 407.4.

1006.3 Egress from stories or occupied roofs.

The *means of egress* system serving any *story* or occupied roof shall be provided with the number ofseparate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. ~~The *path of egress travel* to an *exit* shall not pass through~~ Where stairways serve more than one ~~adjacent~~ story~~.~~, only the *occupant load* of each story considered individually shall be used in calculating the required number *exits* or access to *exits* serving that *story*.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7512_TextOfModification_1.png

F7517

Date Submitted	11/28/2018	**Section**	1006.2.1	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

This modification is to improve the consistency in the determination and application of fundamental FBC means of egress provisions.

Rationale

This proposal is intended to enhance the functionality of these requirements by placing them in context with the applicable means of egress design requirements. For example, Section 1004.1.1.1 states, "Design of egress path capacity shall be based on the cumulative portion of the occupant loads of all rooms, areas or spaces to that point along the path of egress travel." This proposal places the same requirement at Section 1006.2.1 in the context of using capacity to determine the required number of exits or access to exits.

A new Exception 1 to Section 1006.2.1 has been added. It is a logical concern. Literally interpreted, a building with an occupant load of 4,000 and having four required exits with one of those exits having a foyer, lobby, vestibule or similar space would require four exits from such space based on the cumulative occupant load of 1,000. The number of exits from such space would be based on the occupant load of the space; however, the capacity of that exit(s) would be based on the cumulative occupant load served. Perhaps the most important feature of the 6th Edition code change was that it clarified that cumulative occupant loads are not considered when calculating the required number of exits or access to exits serving an adjacent story. An exception clarifies that occupant loads from isolated mezzanines will be considered in determining the number of required exits from the adjacent story.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Approval of this proposal will improve the consistency in the determination and application of fundamental FBC means of egress provisions.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost.

Impact to industry relative to the cost of compliance with code

Will not increase cost.

Impact to small business relative to the cost of compliance with code

Will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification will simply provide clarification of current requirements and will help designers and code officials in the consistent enforcement of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification will simply provide clarification of current requirements and will not weaken the current provisions of the code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification will simply provide clarification of current requirements and will not discriminate against materials, product, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This modification will simply provide clarification of current requirements and will improve the effectiveness of code enforcement.

1st Comment Period History

F7517-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:

Proposed changes to the maximum occupant load of space for R2 and R3 are not consistent with Florida Law.

Revise as follows:

1006.2.1 Egress based on occupant load and common path of egress travel distance.

Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

Exceptions:

1. ~~Reserved.~~ The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative *occupant loads.*
2. Care suites in Group I-2 occupancies complying with Section 407.4.

TABLE 1006.2.1

SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL = 30	OL 30	
A[c], E, M	49	75	75	75[a]
B	49	100	75	100[a]
F	49	75	75	100[a]
H-1, H-2, H-3	3	NP	NP	25[b]
H-4, H-5	10	NP	NP	75[b]
I-1, I-2[d], I-4	10	NP	NP	75[a]
I-3	10	NP	NP	100[a]
R-1	10	NP	NP	75[a]
R-2	~~49~~ 20	NP	NP	125[a]
R-3[e]	~~49~~20	NP	NP	125[a]
R-4[e]	~~10~~20	75	75	125[a]
Sf	29	100	75	100[a]
U	49	100	75	75[a]

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7517_TextOfModification_1.png

For SI: 1 foot = 304.8 mm.

NP - Not permitted

a. Buildings equipped through with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.

b. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.3.2.5.

c. For a room or space used for assembly purposes having fixed seating, see Section 1029.8.

d. For the ravel distance limitations in Group I-2. see Section 407.4.

e. The ~~length of~~ common path of egress travel distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building or within a Group R-3 or R-4 congregate living facility.

f. The length of common path of egress travel distance in a Group S-2 open parking garage shall ~~be~~ not be more than 100 feet.

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F7527

Date Submitted	11/28/2018	**Section**	1003	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarification and coordination of current requirements.

Rationale

The proposal will improve consistency in language throughout the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The proposal will improve consistency in language throughout the code.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost.

Impact to industry relative to the cost of compliance with code

Will not increase cost.

Impact to small business relative to the cost of compliance with code

Will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal will help clarify and coordinate the current code requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the application of the code and will provide clarity to the current code requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the application of the code and will provide clarity to the current code requirements.

Revise as follows:

1003.2 Ceiling height. The *means of egress* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor.

Exceptions:

1. Sloped ceilings in accordance with Section1208.2.
2. Ceilings of *dwelling units* and *sleeping units* within residential occupancies in accordance with Section1208.2.
3. Allowable projections in accordance with Section 1003.3.
4. *Stair* headroom in accordance with Section 1011.3.
5. Door height in accordance with Section 1010.1.1.
6. *Ramp* headroom in accordance with Section1012.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas of public and private parking garages in accordance with Section406.4.1.
8. Areas above and below *mezzanine* floors in accordance with Section505.2.

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 where a minimum headroom of 80 inches (2032 mm) is provided over any ~~walking surface~~ circulation paths, including walks, *corridors*, *aisles* and passageways. Not more than 50 percent of the ceiling area of a *means of egress* shall be reduced in height by protruding objects.

Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).

A barrier shall be provided where the vertical clearance above a circulation path is less than 80 inches (2032 mm) high above the finished floor. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the finished floor.

1003.3.2 Post-mounted objects. A free standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the ~~walking surface~~ finished floor. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (686 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

Exception: These requirements shall not apply to sloping portions of *handrails* between the top and bottom riser of *stairs* and above the *ramp* run.

1003.3.3 Horizontal projections. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor shall not project horizontally more than 4 inches (102mm) the *circulation path*.

Exception: *Handrails* are permitted to protrude 4 1/2 inches (114 mm) from the wall or guard.

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F7563

Date Submitted	11/29/2018	**Section**	1006.2.2	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to regulate exit and exit access doors.

Rationale

The proposed revision clarifies of how the code should currently be applied. The intent of this section is limited to regulating exit and exit access doors, but as currently written, the code incorrectly suggests that any door, even a door to an auxiliary space that doesn't lead to an exit, must swing in the direction of egress.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The code change proposal simply seeks to provide clearer code language and with no intended changes in requirements. Therefore, no negative impact to local entity relative to enforcement of code.

Impact to building and property owners relative to cost of compliance with code

This proposal will not increase the cost of compliance with code.

Impact to industry relative to the cost of compliance with code

This proposal will not increase the cost of compliance with code.

Impact to small business relative to the cost of compliance with code

This proposal will not increase the cost of compliance with code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposed revision clarifies of how the code should currently be applied.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposed revision clarifies of how the code should currently be applied. This will not weaken the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposed revision clarifies of how the code should currently be applied. This will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

The proposed revision clarifies of how the code should currently be applied. This will not degrade the effectiveness of the code.

Revise as follows:

1006.2.2.2. Refrigeration machinery rooms.

Machinery rooms larger than 1,000 square feet (93 m^2) shall have not less than two *exits* or *exit access doorways*. Where two *exit access doorways* are required, one such doorway is permitted to be served by a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

All portions of machinery rooms shall be within 150 feet (45720 mm) of an *exit* or *exit access doorway*. An increase in travel distance is permitted in accordance with Section 1016.1.

~~Doors~~*Exit* or *exit access doorways* shall swing in the direction of egress travel, regardless of the occupant load served. ~~Doors~~*Exit* or *exit access doorways* shall be tight fitting and self-closing.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7563_TextOfModification_1.png

Date Submitted	11/29/2018	**Section**	1004.1.2	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

1006.7

Summary of Modification

Code change proposal is to revise the current maximum floor area allowance per occupant in Table 1004.1.2 for business occupancies from 100 ft2/occupant (gross) to 150 ft2/occupant (gross) for determining the means of egress requirements in business areas.

Rationale

Based on several past research studies that have concluded that the 100 ft2/occupant (gross) occupant load factor for business occupancies is very conservative which has led to requiring Group B occupancies and office buildings in general to have additional egress capacity and a greater number of exits to accommodate an "over-estimated" building population. We believe the increase from 100 ft2/occupant (gross) to 150 ft2/occupant (gross) for business occupancies is still a conservative figure; yet reasonable, based on recent changes in office building design as well as changes in the North American workplace and work style trends; such as work station configurations, flexible work schedules, telecommuting, work at home, etc.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This code modification will be consistent with the changes in the 2018 Florida Fire Prevention Code - NFPA 101.

Impact to building and property owners relative to cost of compliance with code

Overall, the proposal seeks to lessen the occupant load, thus reducing the required means of egress capacity, and the number of plumbing fixtures required for business use occupancies unless the occupant load factor for concentrated business area is applied.

Impact to industry relative to the cost of compliance with code

Overall, the proposal seeks to lessen the occupant load, thus reducing the required means of egress capacity, and the number of plumbing fixtures required for business use occupancies unless the occupant load factor for concentrated business area is applied.

Impact to small business relative to the cost of compliance with code

Overall, the proposal seeks to lessen the occupant load, thus reducing the required means of egress capacity, and the number of plumbing fixtures required for business use occupancies unless the occupant load factor for concentrated business area is applied.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

There were concerns raised about areas where high costs of space would result in a higher density in an office as well as maintain the occupant load during the life of a building as different tenants change. This proposed modification will address the concerns.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will strengthen/improve the application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods. or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the effectiveness of the code.

Revise as follows:

TABLE 1004.1.2

MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR[a]
Business area Concentrated business use areas	~~100~~150 gross See Section1004.7

(Portions of table not shown remain unchanged)

For SI: 1 square foot = 0.0929 m^2, 1 foot = 304.8 mm.

a. Floor area in square feet per occupant.

Add new text as follows:

1004.7 Concentrated business use areas. The occupant load factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the *building official*, the *occupant load* for concentrated business use areas shall be the actual *occupant load*, but not less than one occupant per 50 square foot (4.65 m^2) of gross occupiable floor space.

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F7650

Date Submitted	12/4/2018	**Section**	1006.3	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1006.3.1, 1006.3.2, 1006.3.3,01006.3.3.1, 1030.1

Summary of Modification

Expanding the provisions for the required egress from stories or occupied roofs.

Rationale

This proposal provides needed correlation with Section 1019.3 for single exit buildings that allow for open stairways to serve as the means of egress for more than one story.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This is for clarification, therefore, there will be no additional requirements.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal provides consistency with the provisions found in Section 1019.3.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the enforcement of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the enforcement of the code.

Revised as follows:

1006.3 Egress from stories or occupied roofs.

The means of egress system serving any story or occupied roof shall be provided with the number of separate and distinctexits or access to exits based on the aggregate *occupant load* served in accordance with this section. ~~The path of egress travel to an exit shall not pass through more than one adjacent story.~~Where stairways serve more than on story, only the occupant load of each story considered individually shall be used in calculating the required number of exits or access to exits serving that story.

Add text as follows:

1006.3.1 Adjacent story.

The path of egress travel to an exit shall not pass through more than one adjacent story.

Exception: The path of egress travel to an exit shall be permitted to pass through more than one adjacent story in any of the following:

1. In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/workunit.
2. Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility.
3. Exit access stairways and ramps in open parking garages that serve only the parking garage.
4. Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
5. Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7650_TextOfModification_1.png

Date Submitted	12/4/2018	**Section**	1006.3.2	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Table 1006.3.2(2), 1030.1

Summary of Modification

Corrects a conflict between the provisions in Section 1006.3.2 Item 4 and Table 1006.3.2(2)

Rationale

The proposal corrects a conflict between the provisions in Section 1006.3.2 Item 4 and Table 1006.3.2(2).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This is for clarification, therefore, there will be no additional requirements.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal provides consistency with the provisions found in Section 1006.3.2 Item 4 and Table 1006.3.2(2).

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the enforcement of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the enforcement of the code.

Revised as follows:
1006.3.2 *(no change in the text)*
TABLE 1006.3.2(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE(feet)
First story above or below grade plane	A, B[b], E F[b], M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R-2[a, c], ~~R-4~~	10	75

(no change in the rest of the table)

1030.1 General.

In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue openings in Group R-2 occupancies in accordance with Tables 1006.3.2(1) and 1006.3.2(2); and Group R-3 and R-4 occupancies. *(no change in he remaining of the text)*

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7667_TextOfModification_1.png

F7670

Date Submitted	12/4/2018	**Section**	1008.2.2	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1008.2.3 (add)

Summary of Modification

Provides specific means of egress illumination requirements for Group I-2 and adding a code section of exit discharge illumination.

Rationale

The proposal would provide an appropriate allowance for large campuses that do not have the typical streets around buildings, but may have large open areas. Examples would be office complexes, or college campuses. Section 1028.5 allows a safe dispersal area, therefore adequate lighting requirement is necessary.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will provide additional lighting requirement for safety.

Impact to building and property owners relative to cost of compliance with code

Cost may be increase but will provide additional safety.

Impact to industry relative to the cost of compliance with code

Cost may be increase but will provide additional safety.

Impact to small business relative to the cost of compliance with code

Cost may be increase but will provide additional safety.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal will have reasonable improvement to safety of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the safety requirements of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will not degrade the effectiveness of the code.

Revise as follows:

1008.2.2 ~~Exit discharge~~ Group I-2.

(no change in the text)

Add new test as follows:

1008.2.3 Exit discharge.

Illumination shall be provided along the path of travel for the exit discharge from each exit to the public way.

Exception: Illumination shall not be required where the path of exit discharge meets both of the following requirements:

1. The path of exit discharge is illuminated from the exit to a safe dispersal area complying with Section 1028.5.

2. A dispersal area shall be illuminated to a level not less than 1 footcandle (11 lux) at the walking surface.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7670_TextOfModification_1.png

F7672

Date Submitted	12/4/2018	**Section**	1006.2.2.4	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments	**No**	**Alternate Language**	**No**

Related Modifications

Summary of Modification

The proposal will correlate the provisions for day care facilities to the proper occupancy Group I-4.

Rationale

This is coordination and correlation of requirements in the 6th Edition of FBC. Day care facilities can be found in two occupancy classification - Groups E and I-4. The proposal will provide guidance to design professional and code officials on the applicability of this code section for day care facilities under Group I-4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will provide guidance to design professionals and code officials for the applicability of the code section.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost.

Impact to industry relative to the cost of compliance with code

Will not increase cost.

Impact to small business relative to the cost of compliance with code

Will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This purpose of this proposal is only to clarify the application of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the effectiveness of the code.

Revise as follows:

1006.2.2.4 ~~Day care~~ Group I-4 means of egress.

Day care facilities, rooms or spaces where care is provided for more than 10 children that are 2 1/2 years of age or less, shall have access to not less than two *exits* or *exit access doorways*.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7672_TextOfModification_1.png

F7673

Date Submitted	12/4/2018	**Section**	1017.2	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Table 1017.2, Table 1020.1

Summary of Modification

The proposal will correlate the provisions for day care facilities under occupancy Group I-4.

Rationale

This is coordination and correlation of requirements in the 6th Edition of FBC. Day care facilities can be found in two occupancy classification - Groups E and I-4. The proposal will provide guidance to design professional and code officials on the applicability of this code section for day care facilities under Group I-4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will provide guidance to design professionals and code officials for the applicability of the code section.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost.

Impact to industry relative to the cost of compliance with code

Will not increase cost.

Impact to small business relative to the cost of compliance with code

Will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This purpose of this proposal is only to clarify the application of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the effectiveness of the code.

Revise as follows:

TABLE 1017.2

EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLERSYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250[b]
I-1	Not Permitted	250[b]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[d]
H-2	Not Permitted	100[d]
H-3	Not Permitted	150[d]
H-4	Not Permitted	175[d]
H-5	Not Permitted	200[c]
I-2, I-3, I-4	Not Permitted	200[c]
~~S-1~~ I-4	~~200~~150	~~400~~[b]200[c]

(no change below the table)

TABLE 1020.1

CORRIDOR FIRE-RESISTANCE RATING

(no change to the rest of the table)

I-2[a], ~~I-4~~	All	Not Permitted	0
I-4	All	1	0

(no change to the rest of the table)

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7673_TextOfModification_1.png

F7679

Date Submitted	12/4/2018	**Section**	1004	**Proponent**	Ann Russo1
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Change to clarify application of the occupant load when facilities include both gross and net areas.

Rationale

This proposal is mainly to reorganize Section 1004 and regrouping the functionality of work spaces. There should be little impact as this is simply clarifying how to determine the occupant load for a floor with varying functions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will provide clear guidance to design professionals and code officials as to how occupant load will be determined based on varying functions of the rooms or spaces.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of compliance with code.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of compliance with code.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of compliance with code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proper assignment and/or determination of occupant load will improve the overall safety of the building and the application of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Proper assignment and/or determination of occupant load will improve the overall safety of the building and the application of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the effectiveness of the code.

Revise as follows:

~~1004.1.1~~**1004.2 Cumulative occupant loads.** *(no change to the text)*

~~1004.1.1.1~~**1004.2.1 Intervening spaces or accessory areas.***(no change to the text)*

~~1004.1.1.2~~**1004.2.2 Adjacent levels for mezzanines.***(no change to the text)*

~~1004.1.1.3~~**1004.2.3 Adjacent stories.***(no change to the text)*

Add new text as follows:

1004.3 Multiple function occupant load.

Where an area under consideration contains multiple functions having different occupant load factors, the design occupant load for such area shall be based on the floor area of each function calculated independently.

Revise as follows:

~~1004.6~~ **1004.4 Multiple occupancies.** *(no change to the text)*

~~1004.1.2~~ **1004.5 Areas without fixed seating.**

The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table ~~1004.1.2~~1004.5. For areas without fixed seating, the occupant load shall be not less than that number determined by dividing the floor area under consideration by the occupant load factor assigned to the function of the space as set forth in Table ~~1004.1.2~~1004.5. Where an intended function is not listed in Table ~~1004.1.2~~1004.5, the building official shall establish a function based on a listed function that most nearly resembles the intended function.

*(no change to the **Exception**)*

TABLE ~~1004.1.2~~ 1004.5

MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

(no change to table or footnotes)

~~1004.2~~ **1004.5.1 Increased occupant load.**
The occupant load permitted in any building, or portion thereof, is permitted to be increased from that number established for the occupancies in Table ~~1004.1.2~~1004.5, provided that all other requirements of the code are met based on such modified number and the occupant load does not exceed one occupant per 7 square feet (0.65 m^2) of occupiable floor space. Where required by the building official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the building official, such diagram shall be posted.

~~1004.4~~**1004.6 Fixed seating.**

For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces, shall be determined in accordance with Section ~~1004.1.2~~1004.5and added to the number of fixed seats. *(no change to the remaining of the text)*

~~1004.5~~ 1004.7 Outdoor areas. *(no change to the text)*

~~1004.3~~ 1004.8 Posting of occupant load. *(no change to the text)*

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F7701

Date Submitted	12/5/2018	**Section**	1019.3	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Correct possible misinterpretation of definition on egress stairway and access ramp

Rationale

This exception previously read as follows. "Stairways are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities." The revision last cycle had an unintended consequence. The current text can be read differently without 'between'. It could be read to allow open stairways serving the main assembly floor to be open exit access stairways.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies and eliminates possible issues

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Increases compliance with and protected safety and welfare of occupants in ease of egress

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarification strengthens Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1019.3 Occupancies other than Groups I-2 and I-3.

In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. 1.*Exit access stairways* and *ramps* that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. 2.In Group R-1, R-2 or R-3 occupancies, *exit access stairways* and *ramps* connecting four stories or less serving and contained within an individual *dwelling unit* or *sleeping unit* or *live/work unit.*
3. 3.*Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. 4.*Exit access stairways* and *ramps* in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the *stairway* or *ramp* and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. 5.*Exit access stairways* and *ramps* within an *atrium* complying with the provisions of Section 404.
6. 6.*Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
7. 7.*Exit access stairways* and *ramps* serving open-air seating complying with the *exit access* travel distance requirements of Section 1029.7.
8. 8.*Exit access stairways* and *ramps* ~~serving~~ between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.

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Date Submitted	12/15/2018	**Section**	1006.2.1	**Proponent**	Kimberly Gilliam
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Table 1006.2.1

Summary of Modification

The proposal moves the exception for Group R-2, R-3 and R-4 into the table, where it is easier to find. In addition, this improves flexibility for Group R-2, R-3 and R-4 units in a mixed use building.

Rationale

The proposal moves the exception for Group R-2, R-3 and R-4 into the table, where it is easier to find. In addition, this improves flexibility for Group R-2, R-3 and R-4 units in a mixed use building. Changing the maximum occupant load from 10 to 20 in the table for R-2, R-3 and R-4 is appropriate since all Group R occupancies require sprinkler protection per Section 903.2.8 (NFPA 13 and NFPA 13-R system).

The occupant load limit for R-4 in the table is also proposed to be modified from 10 to 20. Section 310.6 limits R-4 occupancies to 16 residents but does not include "staff" so it is likely that the occupant load will be 17 or more. The change in footnote e is intended to clarify the intent and make it easier to understand.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. This code change eliminates a redundant provision and will not affect the cost of construction.

Impact to building and property owners relative to cost of compliance with code

None. This code change eliminates a redundant provision and will not affect the cost of construction.

Impact to industry relative to the cost of compliance with code

None. This code change eliminates a redundant provision and will not affect the cost of construction.

Impact to small business relative to the cost of compliance with code

None. This code change eliminates a redundant provision and will not affect the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification changes the maximum occupant load for R-2, R-3, and R-4. This improves flexibility for Group R-2, R-3 and R-4 units in a mixed use building.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposal moves the exception for Group R-2, R-3 and R-4 into the table, where it is easier to find. In addition, this improves flexibility for Group R-2, R-3 and R-4 units in a mixed use building.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, it does not degrade the effectiveness of the code.

1006.2.1 Egress based on occupant load and common path of egress travel distance.

Two *exits* or *exit access doorways* from any space shall be provided where the design *occupant load* or the *common path of egress travel* distance exceeds the values listed in Table 1006.2.1.

Exceptions:

1. 1.Reserved.
2. 2.*Care suites* in Group I-2 occupancies complying with Section 407.4.

TABLE 1006.2.1

SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANTLOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System(feet)		With Sprinkler System(feet)
		Occupant Load		
		OL = 30	OL > 30	
Ac, E, M	49	75	75	75a
B	49	100	75	100a
F	49	75	75	100a
H-1, H-2, H-3	3	NP	NP	25b
H-4, H-5	10	NP	NP	75b
I-1, I-2d, I-4	10	NP	NP	75a
I-3	10	NP	NP	100a
R-1	10	NP	NP	75a
R-2	~~49~~ 20	NP	NP	125a
R-3e	~~49~~ 20	NP	NP	125a
R-4e	~~10~~ 20	75	75	125a
Sf	29	100	75	100a

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U	49	100	75	75a

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

1. a.Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
2. b.Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
3. c.For a room or space used for assembly purposes having *fixed seating*, see Section 1029.8.
4. d.For the travel distance limitations in Group I-2, see Section 407.4.
5. e.The ~~length of~~ *common path of egress travel* distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building or within a Group R-3 or R-4 *congregate living facility*.
6. f.The length of *common path of egress travel* distance in a Group S-2 *open parking garage* shall be not more than 100 feet.

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Code Change No: E17-15

Original Proposal

Section: 1006.2.1, TABLE 1006.2.1; (IFC[BE] 1006.2.1, TABLE 1006.2.1)

Proponent: Lee Kranz, City of Bellevue, Washington, representing Washington Association of Building Officials Technical Code Development Committee

Revise as follows:

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two *exits* or *exit access doorways* from any space shall be provided where the design *occupant load* or the *common path of egress travel* distance exceeds the values listed in Table 1006.2.1.

~~**Exceptions**~~ **Exception:**

~~1. In Group R-2 and R-3 occupancies, one *means of egress* is permitted within and from individual *dwelling units* with a maximum *occupant load* of 20 where the *dwelling unit* is equipped throughout with an *automatic sprinkler* system in accordance with Section 903.3.1.1 or 903.3.1.2 and the *common path of egress travel* does not exceed 125 feet (38 100 mm).~~

1. *Care suites* in Group I-2 occupancies complying with Section 407.4.

TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL 30	
A[c], E, M	49	75	75	75[a]
B	49	100	75	100[a]
F	49	75	75	100[a]
H-1, H-2, H-3	3	NP	NP	25[b]
H-4, H-5	10	NP	NP	75[b]
I-1, I-2[d], I-4	10	NP	NP	75[a]
I-3	10	NP	NP	100[a]
R-1	10	NP	NP	75[a]
R-2	~~10~~ 20	NP	NP	125[a]
R-3[e]	~~10~~20	NP	NP	125[a]
R-4[e]	~~10~~20	75	75	125[a]
S[f]	29	100	75	100[a]
U	49	100	75	75[a]

For SI: 1 foot = 304.8 mm.

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NP = Not Permitted
a. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
b. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
c. For a room or space used for assembly purposes having *fixed seating*, see Section 1029.8.
d. For the travel distance limitations in Group I-2, see Section 407.4.
e. The ~~length of~~ *common path of egress travel* distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building or within a Group R-3 or R-4 *congregate living facility*.
f. The length of *common path of egress travel* distance in a Group S-2 *open parking garage* shall be not more than 100feet.

Reason: Exception #1 of Section 1006.2.1 is essentially an exception to the maximum occupant load limits of 10 in Table 1006.2.1 for R-2 and R-3. Increasing the maximum occupant load from 10 to 20 in the table for R-2, R-3 and R-4 and deleting exception #1 is appropriate since all Group R occupancies require sprinkler protection per Section 903.2.8 (NFPA 13 and NFPA 13-R system) and the 125' common path limit in the exception is consistent with the table so the exception is no longer needed.
The occupant load limit for R-4 in the table is also proposed to be modified from 10 to 20. Section 310.6 limits R-4 occupancies to 16 residents but does not include "staff" so it is likely that the occupant load will be 17 or more.
The change in footnote e is intended to clarify the intent and make it easier to understand.

Cost Impact: Will not increase the cost of construction
This code change eliminates a redundant provision and will not affect the cost of construction.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The proposal moves the exception for Group R-2, R-3 and R-4 into the table, where it is easier to find. In addition, this improves flexibility for Group R-2, R-3 and R-4 units in a mixed use building.

Assembly Action: **None**

Final Action Results

E17-15 **AS**

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F7720

Date Submitted	12/6/2018	**Section**	1020.4	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Remove reference to dead end corridor egress and update R-4 exit allowances for single exit

Rationale

Single exit building do not have dead end corridors, therefore this should be removed. Group R-4 are permitted to have single exits per Section 1006.3.2 Item 4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves and clarifies

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety by clarifying requirements

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarification strengthens Code enforcement and compliance

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1020.4 Dead ends.

Where more than one *exit* or *exit access doorway* is required, the *exit access* shall be arranged such that there are no dead ends in *corridors* more than 20 feet (6096 mm) in length.

Exceptions:

1. 1.In occupancies in Group I-3 of Condition 2, 3 or 4, the dead end in a *corridor* shall not exceed 50 feet (15 240 mm).
2. 2.In occupancies in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U, where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the length of the dead-end *corridors* shall not exceed 50 feet (15 240 mm).
3. 3.A dead-end *corridor* shall not be limited in length where the length of the dead-end *corridor* is less than 2.5 times the least width of the dead-end *corridor*.

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F7722

Date Submitted	12/6/2018	**Section**	1023.3.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarify pressurization in exit stairways

Rationale

Pressurized stairs often discharge through an exit passageway. The exit passageway is also typically required to be pressurized since it is a continuation of the pressurized stair enclosure. The system providing pressurization of the stair and passageway is typically the same system. Technical compliance would require separate systems if a separation is required to be maintained. The introduction of a door and fire barrier between the exit passageway and the stair creates an obstruction to airflow which inhibits the pressurization of the stair and passageway. The provision of a separation does not provide any added safety and could also impede egress.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves enforcement, plan review and conformance to life safety requirements

Impact to building and property owners relative to cost of compliance with code

No negative impact

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety aspects of design for egress by occupants

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code application, conformance and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Revise as follows:

1023.3.1 Extension.

Where *interior exit stairways* and *ramps* are extended to an *exit discharge* or a *public way* by an *exit passageway*, the *interior exit stairway* and *ramp* shall be separated from the *exit passageway* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than that required for the *interior exit stairway* and *ramp*. A *fire door* assembly complying with Section 716.5 shall be installed in the *fire barrier* to provide a *means of egress* from the *interior exit stairway* and *ramp* to the *exit passageway*. Openings in the *fire barrier* other than the *fire door* assembly are prohibited. Penetrations of the *fire barrier* are prohibited.

Exceptions:

1. 1.Penetrations of the *fire barrier* in accordance with Section 1023.5 shall be permitted.
2. 2.Separation between an *interior exit stairway* or *ramp* and the *exit passageway* extension shall not be required where there are no openings into the *exit passageway* extension.

3. Separation between an *interior exit stairway* or *ramp* and the *exit passageway* extensionshall not be required when the interior exit stair and the exit passageway extension are pressurized inaccordance with Section909.20.5.

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F7723

Date Submitted	12/6/2018	**Section**	1023.5	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Improves penetration protection for security wiring applications

Rationale

Building security systems, including cameras in stairways, are becoming more prevalent. If properly protected, a limited number of penetrations for security systems will not result in an unacceptable level of safety. NFPA 101-2015 requires stairway video monitoring in high-rise buildings having an occupant load of 4,000 or more persons.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves design conformance and enforcement

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Addresses conformance and improves life safety aspects for occupants

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1023.5 Penetrations.

Penetrations into or through *interior exit stairways* and *ramps* are prohibited except for equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and security systems, and electrical race-way serving the *interior exit stairway* and *ramp* and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent *interior exit stairways* and *ramps*.

Exception: Membrane penetrations shall be permitted on the outside of the *interior exit stairway* and *ramp*. Such penetrations shall be protected in accordance with Section 714.3.2.

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F7724

Date Submitted	12/6/2018	**Section**	1024.6	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Improves definition of systems under reference

Rationale

The modification is to maintain the exceptions and is coordination with other sections. The exceptions are needed to allow for outlets, light switches, fire alarm pull stations and exit signs. In the main text, the change from 'sprinkler piping and standpipes' to 'fire protection systems' would allow for all systems used for fire fighting. The addition of the 'two-way communication system' allows for requirements associated with the fire fighters communication, the requirements in high rises for systems in the stairway every five floors, and areas of refuge.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies requirements improving plan review and enforcement of Code for life safety

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves definition of life safety equipment in support of fire and rescue requirements improving safety of building occupants

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does improve enforcement by better definition and inclusion of systems required

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1024.6 Penetrations.

Penetrations into or through an *exit passageway* are prohibited except for equipment and ductwork necessary for independent pressurization, ~~sprinkler piping~~ fire protection systems, ~~standpipes~~ twoway communication systems, electrical raceway for fire department communication and electrical raceway serving the *exit passageway* and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communicating openings, whether protected or not, between adjacent *exit passageways*.

Exception: Membrane penetrations shall be permitted on the outside of the *exit passageway*. Such penetrations shall be protected in accordance with Section 714.3.2.

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F7725

Date Submitted	12/6/2018	**Section**	1023.11	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Improved coordination between sections on requirements

Rationale

Section 412.3.2 requires smokeproof enclosures for air traffic control tower stairs and refers to section 1023.11 but section 1023.11 does not reference back to 412.3.2 as it does for high-rise buildings (403.5.4) and underground buildings (405.7.2). This change is proposed to reduce potential confusion from the lack of the reference statement in 1023.11.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves coordination and limits confusion during plan review and field enforcement

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety of enclosure and occupants

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by clarifying requirements and coordination between sections

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1023.11 Smokeproof enclosures.

Where required by Section 403.5.4 ~~or~~, 405.7.2 or 412.3.2, *interior exit stairways* and *ramps* shall be *smokeproof enclosures* in accordance with Section 909.20.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7725_TextOfModification_1.png

Date Submitted	12/7/2018	**Section**	1010.1.1	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

This proposal combines approved revisions to the 2018 IBC by proposals E47-15 and E49-15. which were approved “As Modified”. The intent of a large portion of this change is consistent use of the terminology (e.g., minimum clear opening width/height) throughout this section.

Rationale

This proposal combines approved revisions to the 2018 IBC by proposals E47-15 and E49-15.
Both E47-15 and E49-15 were approved “As Modified” by the ICC Means of Egress Code Committee, and received final approval via the consent agenda during the Public Comment Hearing.
Reason: The intent of a large portion of this change is consistent use of the terminology (e.g., minimum clear opening width/height) throughout this section. There is also the intent of putting the modifier first within the specific requirements (Group I-2, ambulatory care) and the exceptions. The maximum door width sentence is relocated to be after all the minimum door width requirements.
Exceptions 1, 2, 6 and 7 cannot be used in Accessible, Type A or Type B units; that would conflict with ICC A117.1, ADA and FHA.
Also in Exception 7: dwelling units and sleeping units in Group I-2 and I-3 have specific criteria elsewhere in this section, and the ADA does not allow Group R-1 units to use this exception, therefore, the more specific limitation to allow this in Group I-1, R-2, R-3 and R-4.
Exception 8 is revised to be consistent with the language used for Type B dwelling units in ICC A117.1.
Code change E52-12 added exception 12 as part of the coordination with ADA 224.1.2. Questions that have risen are: Is the intent to require 32" clear width shower stall doors in all showers Group I-1, R-2, R-3 and R-4 or multi-stall shower rooms? Is the intent to require 32" clear width shower doors in the 2nd bathrooms in Accessible units that are not required to have clearances? Elimination first part of the sentence would not change the allowances for Accessible hotel rooms, and would eliminate the question.
Exception 13 is proposed to be added to address a similar question for doors on toilet stalls. The width of 32" is especially a problem with IPC since the stall is only required to be 30" wide.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This section of the FBC should be clearer, easier to understand, more consistently interpreted, applied, and enforced.

Impact to building and property owners relative to cost of compliance with code

A code that is clearer, easier to understand, more consistently interpreted, applied, and enforced, and removes several ambiguities, but does not introduce new requirements, should not increase cost, and may result in reductions in cost.

Impact to industry relative to the cost of compliance with code

A code that is clearer, easier to understand, more consistently interpreted, applied, and enforced, may result in reductions in the cost of doing business, especially if differences in code interpretation and enforcement are reduced or eliminated.

Impact to small business relative to the cost of compliance with code

A code that is clearer, easier to understand, more consistently interpreted, applied, and enforced, may result in reductions in the cost of doing business, especially if differences in code interpretation and enforcement are reduced or eliminated.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposed revisions provide easier to understand requirements for the size of doors. Door size affects egress and accessibility, both of which have a direct connection to health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

A code that is clearer, easier to understand, more consistently interpreted, applied, and enforced, may result in reductions in the cost of doing business, especially if differences in code interpretation and enforcement are reduced or eliminated.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Proposed revisions to discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

Proposed revisions do not degrade the effectiveness of the code.

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear opening width of 32 inches (813 mm). ~~Clear openings~~The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ In Group I-2, doors serving as *means of egress* doors ~~in a Group I-2 occupancy~~where used for the movement of beds shall provide a minimum clear opening width ~~not less than~~of 41 1 /2 inches (1054 mm). ~~The~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The minimum clear opening height of ~~door openings~~doors shall be not less than 80 inches (2032 mm).

Exceptions:

1. In Group R-2 and R-3 *dwelling* and *sleeping units* that are not required to be an Accessible unit, Type A unit or Type B unit, the minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* ~~in Group R-2 and R-3 occupancies~~.

2. In Group I-3, door openings to resident *sleeping units* ~~in Group I-3 occupancies~~that are not required to be an Accessible unit shall have a minimum clear opening width of ~~not less than~~ 28 inches (711 mm).

3. Door openings to storage closets less than 10 square feet (0.93 m2) in area shall not be limited by the minimum clear opening width.

4. The width of door leaves in revolving doors that comply with Section 1010.1.4.1 shall not be limited.

5. ~~Door openings within a dwelling unit or sleeping unit shall be not less than 78 inches (1981 mm) in height~~The maximum width of door leaves in *power-operated doors* that comply with Section 1010.1.4.2 shall not be limited.

6. Door openings within a *dwelling unit* or *sleeping unit* shall have a minimum clear opening height of 78 inches (1981 mm).

7. ~~In other than Group R-1 occupancies~~ In *dwelling* and *sleeping units* that are not required to be Accessible, Type A or Type B units, exterior door openings ~~in dwelling units and sleeping units,~~ other than the required *exit* door~~,~~ shall ~~be not less than~~have a minimum clear opening height of 76 inches (1930 mm~~) in height.~~).

8. In Groups I-1, R-2, R-3 and R-4, in *dwelling* and *sleeping units* that are not required to be Accessible, Type A or Type B units, the minimum clear opening widths shall not apply to interior egress doors ~~within a dwelling unit or sleeping unit that is not required to be an Accessible unit~~.

9. Door openings required to be *accessible* within Type B units intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).

~~8~~10. Buildings that are 400 square feet (37 m2) or less and that are intended for use in conjunction with one- and two-family residences are not subject to the door height and width requirements of this code.

11. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m2) in area shall have a maximum width of 60 inches (1524 mm~~).~~) nominal.

~~10. In Group R-1 dwelling units or sleeping units not required to be Accessible units, the minimum~~

12. The minimum clear opening width shall not apply to doors for ~~showers or saunas~~nonaccessible shower or sauna compartments.

13. The minimum clear opening width shall not apply to the doors for nonaccessible toilet stalls.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7750_TextOfModification_1.png

2020 FBC Proposal E47-15 and E49-15 Size of Doors.

John Woestman, BHMA, Dec. 7, 2018

Revise as follows:

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear opening width of 32 inches (813 mm). ~~Clear openings~~The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ In Group I-2, doors serving as *means of egress* doors ~~in a Group I-2 occupancy~~where used for the movement of beds shall provide a minimum clear opening width ~~not less than~~of 41 1 /2 inches (1054 mm). ~~The~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The minimum clear opening height of ~~door openings~~doors shall be not less than 80 inches (2032 mm).

Exceptions:

1. In Group R-2 and R-3 *dwelling* and *sleeping units* that are not required to be an Accessible unit, Type A unit or Type B unit, the minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* ~~in Group R-2 and R-3 occupancies~~.

2. In Group I-3, door openings to resident *sleeping units* ~~in Group I-3 occupancies~~that are not required to be an Accessible unit shall have a minimum clear opening width of ~~not less than~~ 28 inches (711 mm).

3. Door openings to storage closets less than 10 square feet (0.93 m2) in area shall not be limited by the minimum clear opening width.

4. The width of door leaves in revolving doors that comply with Section 1010.1.4.1 shall not be limited.

5. ~~Door openings within a dwelling unit or sleeping unit shall be not less than 78 inches (1981 mm) in height~~The maximum width of door leaves in *power-operated doors* that comply with Section 1010.1.4.2 shall not be limited.

6. Door openings within a *dwelling unit* or *sleeping unit* shall have a minimum clear opening height of 78 inches (1981 mm).

7. ~~In other than Group R-1 occupancies~~ In *dwelling* and *sleeping units* that are not required to be Accessible, Type A or Type B units, exterior door openings ~~in dwelling units and sleeping units,~~ other than the required *exit* door, shall ~~be not less than~~have a minimum clear opening height of 76 inches (1930 mm) ~~in height.~~).

8. In Groups I-1, R-2, R-3 and R-4, in *dwelling* and *sleeping units* that are not required to be Accessible, Type A or Type B units, the minimum clear opening widths shall not apply to interior egress doors ~~within a dwelling unit or sleeping unit that is not required to be an Accessible unit~~.

9. Door openings required to be *accessible* within Type B units intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).

~~8~~10. Buildings that are 400 square feet (37 m2) or less and that are intended for use in conjunction with one- and two-family residences are not subject to the door height and width requirements of this code.

Commented [WJ1]: Florida specific text - retained.

11. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m2) in area shall have a maximum width of 60 inches (1524 mm~~).~~) nominal.

~~10. In Group R-1 dwelling units or sleeping units not required to be Accessible units, the minimum~~

12. The minimum clear opening width shall not apply to doors for ~~showers or saunas~~nonaccessible shower or sauna compartments.

13. The minimum clear opening width shall not apply to the doors for nonaccessible toilet stalls.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7750_Text_2020 FBC Proposal E47-15, E49-15 Size of Doors_1.png

This proposal combines approved revisions to the 2018 IBC by proposals E47-15 and E49-15.

Both E47-15 and E49-15 were approved "As Modified" by the ICC Means of Egress Code Committee, and received final approval via the consent agenda during the Public Comment Hearing.

E47-15 info, reasons, and committee action:

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Reason: In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee

The intent of a large portion of this change is consistent use of the terminology (e.g., minimum clear opening width/height) throughout this section. There is also the intent of putting the modifier first within the specific requirements (Group I-2, ambulatory care) and the exceptions. The maximum door width sentence is relocated to be after all the minimum door width requirements.

Exceptions 1, 2, 6 and 7 cannot be used in Accessible, Type A or Type B units; that would conflict with ICC A117.1, ADA and FHA. Also in Exception 7: dwelling units and sleeping units in Group I-2 and I-3 have specific criteria elsewhere in this section, and the ADA does not allow Group R-1 units to use this exception, therefore, the more specific limitation to allow this in Group I-1, R-2, R-3 and R-4.

Exception 8 is revised to be consistent with the language used for Type B dwelling units in ICC A117.1.

Code change E52-12 added exception 12 as part of the coordination with ADA 224.1.2. Questions that have risen are: Is the intent to require 32" clear width shower stall doors in all showers Group I-1, R-2, R-3 and R-4 or multi-stall shower rooms? Is the intent to require 32" clear width shower doors in the 2nd bathrooms in Accessible units that are not required to have clearances? Elimination first part of the sentence would not change the allowances for Accessible hotel rooms, and would eliminate the question.

Exception 13 is proposed to be added to address a similar question for doors on toilet stalls. The width of 32" is especially a problem with IPC since the stall is only required to be 30" wide.

Committee Action: Approved as Modified (modifications incorporated in proposal)

Committee Reason: The proposal is a good clean up and provides consistency in terminology.

E49-15 info, reasons, and committee action:

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Reason: The proposed revisions are intended to improve clarity and consistency of the language of these sections of the code, and appear to be essentially editorial. The maximum width of power-operated doors which comply with IBC Section 1010.1.4.2 should not be limited as these doors are either fully automatic or power-assisted, and must comply with all the requirements of Section 1010.1.4.2 including the safety requirements incorporated in the BHMA standards referenced in 1010.1.4.2. This revision addresses a potential conflict between the IBC and the relatively few power-operated swinging doors currently being installed which exceed 48" inches in width.

Committee Action: Approved as Modified (modifications incorporated in proposal)

Committee Reason: Power doors provide a higher level of accessibility and access. The maximum width on power doors is not an issue for means of egress.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7750_Text_2020 FBC Proposal E47-15, E49-15 Size of Doors_2.png

F7753

Date Submitted	12/7/2018	**Section**	1023.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

New section

Summary of Modification

Better coordination and references to standpipe requirements

Rationale

Placing references to Sections 905.3 and 905.4 standpipe requirements for interior exit stairways & ramps (Section 1023), exit passageways (Section 1024) and horizontal exits (Section 1026) will help designers and reviewers to include this requirement early in the building design process. During the means of egress design process, the requirement for standpipes for interior exit stairways/ramps, exit passageways and horizontal exits are frequently overlooked and may have significant cost impacts to correct later during construction. Including the standpipe references will make the design team aware of the requirement early in the design process and help insure cost impacts are considered at the appropriate time.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assist in plan review and coordination

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves coordination and safety of occupants in buidling

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Increases Code compliance in design stages as well as construction

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Add following section:

1023.12 Standpipes. Standpipes and standpipe hose connections shall be provided in accordance with Sections 905.3 and 905.4.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7753_TextOfModification_1.png

F7754

Date Submitted	12/7/2018	**Section**	1024.8	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

New section

Summary of Modification

Better coordination and references to standpipe requirements

Rationale

Placing references to Sections 905.3 and 905.4 standpipe requirements for interior exit stairways & ramps (Section 1023), exit passageways (Section 1024) and horizontal exits (Section 1026) will help designers and reviewers to include this requirement early in the building design process. During the means of egress design process, the requirement for standpipes for interior exit stairways/ramps, exit passageways and horizontal exits are frequently overlooked and may have significant cost impacts to correct later during construction. Including the standpipe references will make the design team aware of the requirement early in the design process and help insure cost impacts are considered at the appropriate time.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assist in plan review and coordination

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves coordination and safety of occupants in buidling

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Increases Code compliance in design stages as well as construction

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Add following section:

1024.8 Standpipes. Standpipes and standpipe hose connections shall be provided in accordance with Sections 905.3 and 905.4.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7754_TextOfModification_1.png

F7755

Date Submitted	12/7/2018	**Section**	1026.5	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

New section

Summary of Modification

Better coordination and references to standpipe requirements

Rationale

Placing references to Sections 905.3 and 905.4 standpipe requirements for interior exit stairways & ramps (Section 1023), exit passageways (Section 1024) and horizontal exits (Section 1026) will help designers and reviewers to include this requirement early in the building design process. During the means of egress design process, the requirement for standpipes for interior exit stairways/ramps, exit passageways and horizontal exits are frequently overlooked and may have significant cost impacts to correct later during construction. Including the standpipe references will make the design team aware of the requirement early in the design process and help insure cost impacts are considered at the appropriate time.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assist in plan review and coordination

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves coordination and safety of occupants in buidling

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Increases Code compliance in design stages as well as construction

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Add following section:

1026.5 Standpipes. Standpipes and standpipe hose connections shall be provided in accordance with Sections 905.3 and 905.4.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7755_TextOfModification_1.png

F7756

Date Submitted	12/7/2018	**Section**	1025.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Update reference and delete from I-2 occupancy as not needed

Rationale

The intent of this proposal is to delete Group I-2 from the facilities that require luminous egress path markings. Hospitals and nursing homes have trained staff that operate with a defend-in-place strategy for fires. The emergency generators are continually monitored and maintained, so the change of the emergency egress lighting required in the means of egress (Section 1008) failing is extremely minimal. Requiring egress path marking is the stairways in high-rise hospitals and nursing homes is a redundant feature that is costly and unnecessary.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None, but may lower costs on initial construction

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Does not impact safety aspects as other Code sections provide the protection

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does not have impact

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1025.1 General. *Approved* luminous egress path markings delineating the exit path shall be provided in *high-rise buildings* of Group A, B, E, ~~I,~~ I-1, I-3, I-4, M, and R-1 occupancies in accordance with Sections 1025.1 through 1025.5.

Exception: Luminous egress path markings shall not be required on the *level of exit discharge* in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7756_TextOfModification_1.png

F7757

Date Submitted	12/7/2018	**Section**	1025.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Delete Group I-4 from requirements

Rationale

The intent of this proposal is to delete Group I-4 from the facilities that require luminous egress path markings. The current provisions appear to have been written for single occupancy buildings in mind. While there could be a day care in a high rise building, there is no justification for the presence of a small Group I-4 in a building to require photo luminescent stripes throughout.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Does not impact

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does not impact

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Revise as follows:

1025.1 General.

Approved luminous egress path markings delineating the exit path shall be provided in *high-rise buildings* of Group A, B, E, ~~I,~~ I-1, I-2, I-3, M, and R-1 occupancies in accordance with Sections 1025.1 through 1025.5.

Exception: Luminous egress path markings shall not be required on the *level of exit discharge* in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7757_TextOfModification_1.png

F7758

Date Submitted	12/7/2018	**Section**	1025.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Delete Group I-3 from requirements

Rationale

The intent of this proposal is to delete Group I-3 from the facilities that require luminous egress path markings. Jails have trained staff that operate with a defend-in-place strategy for fires. The emergency generators are continually monitored and maintained, so the change of the emergency egress lighting required in the means of egress (Section 1008) failing is extremely minimal. Requiring egress path marking is the stairways in high-rise jails is a redundant feature that is costly and unnecessary.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Does not impact

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does not impact

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Revise as follows:

1025.1 General.

Approved luminous egress path markings delineating the exit path shall be provided in *high-rise buildings* of Group A, B, E, ~~I~~, I-1, I-2, I-4, M, and R-1 occupancies in accordance with Sections 1025.1 through 1025.5.

Exception: Luminous egress path markings shall not be required on the *level of exit discharge* in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7758_TextOfModification_1.png

Date Submitted	12/7/2018	**Section**	1025.2.5	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments **No** **Alternate Language** **No**

Related Modifications

Summary of Modification

Include exception to marking

Rationale

1025.2.1 steps, 1025.2.3 handrails, and 1025.2.4 perimeter demarcation lines, all provide an exception to the minimum width of 1 inch when the step, handrail and perimeter demarcation lines are listed in accordance with UL 1994, a performance standard. This exception should also apply to Section 1025.2.5 for obstacle markings as the performance has been evaluated and validated by UL 1994.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Coordinates safety requirements among sections on safety aspects

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code in plan review and coordinated enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Revise as noted:

1025.2.5 Obstacles.

Obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path shall be outlined with markings not less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminous material and black, with the alternating bands not more than 2 inches (51 mm) thick and angled at 45 degrees (0.79 rad). Obstacles shall include, but are not limited to, standpipes, hose cabinets, wall projections and restricted height areas. However, such markings shall not conceal any required information or indicators including but not limited to instructions to occupants for the use of standpipes.

Exception: The minimum width of 1 inch (25 mm) shall not apply to markings listed in accordance with UL 1994.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7759_TextOfModification_1.png

F7760

Date Submitted	12/7/2018	**Section**	1026.4	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Updates standard for capacity of refuge area

Rationale

If the total occupant load of the compartment egressing through the horizontal exit is less than the capacity of the horizontal exit door, the maximum capacity of the refuge area should not be more than the legal capacity of the compartment egressing.

For example, a standard 36-inch-wide door has a clear width of 33 inches. At 0.20" per occupant, the capacity of the door is 165 occupants. For sprinklered buildings at 0.15" per occupant, the load is even greater at 220 occupants. So, if the total occupant load on one side of the horizontal exit door is less than 165 for a non-sprinklered building, or less than 220 occupants for a sprinklered building, then the refuge area on the other side should only be required to accommodate the design occupant load and not the capacity of the door in the horizontal exit.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies refuge area capacity more clearly thus improving enforcement and safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

Revise as follows:

1026.4 Refuge area.

The refuge area of a *horizontal exit* shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original *occupant load* of the refuge area plus the *occupant load* anticipated from the adjoining compartment. The anticipated *occupant load* from the adjoining compartment shall be based on the capacity of the *horizontal exit doors* entering the refuge area <u>but no more than the total occupant load of the adjoining compartment</u>.

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F7761

Date Submitted	12/7/2018	**Section**	1026.4.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarifies capacity requirement for horizontal egress refuge areas

Rationale

This proposal clarifies the capacity requirements for horizontal exit refuge areas for defend in place occupancies. Currently, the requirements for defend in place occupancies are located in the exception, rather than being located in the body of the text. Since the exception would be more restrictive than the section, we are suggesting moving the requirements by reference into the main body of the text. In addition, by a reference back to the refuge area capacities in Chapter 4, the provisions will always stay coordinated.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves efficiency and clarifies Code egress refuge approach improving life safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1026.4.1 Capacity.

The capacity of the refuge area shall be computed based on a *net floor area* allowance of 3 square feet (0.2787 m^2) for each occupant to be accommodated therein. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Groups I-1, I-2 and I- 3 occupancies and Group B ambulatory care facilities shall comply with Section 407.5.1, 408.6.2, 420.4.1 and 422.3.2 as applicable.

Exceptions: ~~The *net floor area* allowable per occupant shall be as follows for the indicated occupancies:~~

1. ~~1.Six square feet (0.6 m^2) per occupant for occupancies in Group I-3.~~
2. ~~2.Fifteen square feet (1.4 m^2) per occupant for ambulatory occupancies in Group I-2.~~
3. ~~3.Thirty square feet (2.8 m^2) per occupant for nonambulatory occupancies in Group I-2.~~

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F7762

Date Submitted	12/7/2018	**Section**	1010.1.4.1.2	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The requirements for revolving doors were revised / updated for the 2015 IBC, including a definition of “breakout” and the use of that term which took the place of the term “collapsing”. I missed this revision during the code development cycle for the 2015 IBC. Hence this proposal.

Rationale

Fix a missed clarification of replacing "collapsing" with "breakout".

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. Proposal is a clarification of the code text.

Impact to building and property owners relative to cost of compliance with code

None. Proposal is a clarification of the code text.

Impact to industry relative to the cost of compliance with code

None. Proposal is a clarification of the code text.

Impact to small business relative to the cost of compliance with code

None. Proposal is a clarification of the code text.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proposal is a clarification of the code text regarding egress through revolving doors.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Proposal is a clarification of the code text regarding egress through revolving doors. Improves the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate. Proposal is a clarification of the code text regarding egress through revolving doors.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code. Proposal is a clarification of the code text regarding egress through revolving doors.

1010.1.4.1.2 Other than egress component. A revolving door used as other than a component of a *means of egress* shall comply with Section 1010.1.4.1. The *breakout* force of a revolving door not used as a component of a *means of egress* shall not be more than 180 pounds (801 N).

Exception: A *breakout* force in excess of 180 pounds (801 N) is permitted if the ~~collapsing~~ *breakout* force is reduced to not more than 130 pounds (578 N) when not less than one of the following conditions is satisfied:

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F7763

Date Submitted	12/7/2018	**Section**	1010.1.4.2	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The Builders Hardware Manufacturers Association (BHMA), an ANSI accredited SDO, received ANSI approval of A156.38-2014 Low Energy Power Operated Sliding and Folding Doors, with mandatory performance and safety requirements for low energy power operated sliding and folding doors.

Rationale

The Builders Hardware Manufacturers Association (BHMA), an ANSI accredited standard development organization, received ANSI approval of A156.38-2014 Low Energy Power Operated Sliding and Folding Doors. This new standard has mandatory performance and safety requirements for low energy power operated sliding and folding doors, and “rounds out” this section of the FBC to now include most types of power operated doors. The standards currently referenced in this section are BHMA A156.10 Power Operated Pedestrian Doors (for swinging, sliding, and folding doors) and BHMA A156.19 Standard for Power Assist and Low Energy Operated Doors (for swinging doors).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This new standard has mandatory performance and safety requirements for low energy power operated sliding and folding doors. Manufacturers of these doors voluntarily comply with this standard. The standard provides a technical basis for code compliance, which should facilitate code enforcement.

Impact to building and property owners relative to cost of compliance with code

Streamlines specifications for these types of low energy power operated doors. Should not add cost as manufacturers comply voluntarily with this standard.

Impact to industry relative to the cost of compliance with code

Should not add cost as manufacturers comply voluntarily with this standard.

Impact to small business relative to the cost of compliance with code

Should not add cost as manufacturers comply voluntarily with this standard.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This new standard has mandatory performance and safety requirements for low energy power operated sliding and folding doors.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code as this new standard has mandatory performance and safety requirements for low energy power operated sliding and folding doors,

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The standard has mandatory performance and safety requirements for low energy power operated sliding and folding doors and does not discriminate against material, products, methods, or systems.

Does not degrade the effectiveness of the code

No, increases the effectiveness of the code.

Revise definition

LOW-ENERGY POWER-OPERATED DOOR. Swinging, sliding, or folding door which opens automatically upon an action by a pedestrian such as pressing a push plate or waving a hand in front of a sensor. The door closes automatically, and operates with decreased forces and decreased speeds (see "Power-assisted door" and "Power-operated door").

Revise as follow:

1010.1.4.2 Power-operated doors. Where *means of egress* doors are operated or assisted by power, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit *means of egress* travel or closed where necessary to safeguard *means of egress*. The forces required to open these doors manually shall not exceed those specified in Section 1010.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of ~~swinging~~ opening from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Power-operated swinging doors, power-operated sliding doors and power operated folding doors shall comply with BHMA A156.10. Power-assisted swinging doors and low energy power-operated swinging doors shall comply with BHMA A156.19. Low energy power-operated sliding doors and low energy power-operated folding doors shall comply with BHMA A156.38.

Exceptions:

1. Occupancies in Group I-3.

2. Horizontal sliding doors complying with Section 1010.1.4.3.

3. For a biparting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1010.1.1, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

Add standard reference to Chapter 35:

A156.38—2014 Low Energy Power Operated Sliding and Folding Doors. 1010.1.4.2

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F7765

Date Submitted	12/8/2018	**Section**	1027.5	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Addresses egress stair requirements for Group R-3 requirements

Rationale

The proposed code change to Section 1027.5 adds an exception to limit the fire separation distance to 5 ft for an R-3 occupancy. The proposed exception # 4 to Section 1027.6 exempts an exterior exit stairway on up to a 4 story R-3 from being separated from the interior of a building. A four story R-3 should be the upper limit since the type of construction will have to be increased from type if more than 4 stories in height.
The FBC regulates Group R-3 occupancies, typically one dwelling or two dwellings units located within the same building when the building configuration is not within the scope of the Residential Code. So Group R-3 occupancies more than three stories above grade plane and group R-3 occupancies with 2 units using a common means of egress are required to comply with the FBC. Additionally, Townhouses that have a height of more than three stories above grade plane, and townhouses with only one side open to a pubic way also need to comply with the FBC.

The FBC in many instances exempts R-3 occupancies from means of egress requirements more appropriate for buildings with larger occupant loads and buildings with multiple tenant spaces/units sharing a common means of egress system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Simplifies and improves enforcement

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves plan review and enforcement with regards to occupant safety and welfare

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code application and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1027.5 Location.

Exterior exit stairways and *ramps* shall have a minimum fire separation distance of 10 feet (3048 mm) measured at right angles from the exterior edge of the *stairway* or *ramps*, including landings, to:

1. 1.Adjacent *lot lines*.
2. 2.Other portions of the building.
3. 3.Other buildings on the same lot unless the adjacent building *exterior walls* and openings are protected in accordance with Section 705 based on *fire separation distance.*

For the purposes of this section, other portions of the building shall be treated as separate buildings.

Exception: Exterior exit stairways and ramps serving individual dwelling units of Group R-3 shall have a minimum fire separation distance of 5 feet.

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F7766

Date Submitted	12/8/2018	**Section**	1027.6	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Addresses egress stair requirements for Group R-3 requirements

Rationale

The proposed code change to Section 1027.5 adds an exception to limit the fire separation distance to 5 ft for an R-3 occupancy. The proposed exception # 4 to Section 1027.6 exempts an exterior exit stairway on up to a 4 story R-3 from being separated from the interior of a building. A four story R-3 should be the upper limit since the type of construction will have to be increased from type if more than 4 stories in height.
The FBC regulates Group R-3 occupancies, typically one dwelling or two dwellings units located within the same building when the building configuration is not within the scope of the Residential Code. So Group R-3 occupancies more than three stories above grade plane and group R-3 occupancies with 2 units using a common means of egress are required to comply with the FBC. Additionally, Townhouses that have a height of more than three stories above grade plane, and townhouses with only one side open to a pubic way also need to comply with the FBC.

The FBC in many instances exempts R-3 occupancies from means of egress requirements more appropriate for buildings with larger occupant loads and buildings with multiple tenant spaces/units sharing a common means of egress system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Simplifies and improves enforcement

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves plan review and enforcement with regards to occupant safety and welfare

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code application and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1027.6 Exterior exit stairway and ramp protection.

Exterior exit stairways and *ramps* shall be separated from the interior of the building as required in Section 1023.2. Openings shall be limited to those necessary for egress from normally occupied spaces. Where a vertical plane projecting from the edge of an *exterior exit stairway* or *ramp* and landings is exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the exterior wall shall be rated in accordance with Section 1023.7.

Exceptions:

1. 1.Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are not more than two stories above *grade plane* where a *level of exit discharge* serving such occupancies is the first story above *grade plane*.
2. 2.Separation from the interior of the building is not required where the *exterior exit stairway* or *ramp* is served by an *exterior exit ramp* or balcony that connects two remote *exterior exit stairways* or other *approved exits* with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be not less than 50 percent of the height of the enclosing wall, with the top of the openings not less than 7 feet (2134 mm) above the top of the balcony.
3. 3.Separation from the open-ended *corridor* of the building is not required for *exterior exit stairways* or *ramps*, provided that Items 3.1 through 3.5 are met:
   1. 3.1.The building, including open-ended *corridors*, and *stairways* and *ramps*, shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
   2. 3.2.The open-ended *corridors* comply with Section 1020.
   3. 3.3.The open-ended *corridors* are connected on each end to an *exterior exit stairway* or *ramp* complying with Section 1027.
   4. 3.4.The *exterior walls* and openings adjacent to the *exterior exit stairway* or *ramp* comply with Section 1023.7.
   5. 3.5.At any location in an open-ended *corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m^2) or an *exterior stairway* or *ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

   4. In Group R-3 occupancies not more than 4-stories in height, exterior exit stairways and ramps serving individual dwelling units are not required to be separated from the interior of the building where the exterior exit stairway or ramp discharges directly tograde.

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F7768

Date Submitted	12/8/2018	**Section**	1028.4.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The proposal deletes an outdated and unused code requirement for egress courts.

Rationale

This proposal deletes an outdated and unused code requirement for egress courts. The concept of using a 36" tall guardrail to "herd" occupants toward the exit when the egress court exceeds the minimum required width is absurd and does nothing to improve the safety of occupants. Can you imagine a building owner's response when an architect shows this on a design development plan? The guard would effectively eliminate portions of the egress court exceeding the minimum required width from use by occupants. Why would anyone ever design the court to be larger than the minimum required width only to install a guardrail to prevent it's use? This is an obsolete regulation and needs to be deleted.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Eliminates confusion with Code requirement thus improvement occupant safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code in plan review and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1028.4.1 Width or capacity.

The required capacity of *egress courts* shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches (1118 mm), except as specified herein. *Egress courts* serving Group R-3 and U occupancies shall be not less than 36 inches (914 mm) in width. The required capacity and width of *egress courts* shall be unobstructed to a height of 7 feet (2134 mm).

Exception: Encroachments complying with Section 1005.7.

~~Where an *egress court* exceeds the minimum required width and the width of such *egress court* is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the *egress court* along the path of egress travel.~~ The width of the *egress court* shall not be less than the required capacity.

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F7771

Date Submitted	12/8/2018	**Section**	1005.3.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1005.3.1 Stairways.

The capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where *stairways* serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the *stairways* serving that story.

Exceptions:

1. 1.For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communication* system in accordance with Section 907.5.2.2.
2. 2.Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1029.6.2 indicated for stepped aisles for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.
3. 3.Facilities with ~~*outdoor smoke-protected*~~ *open-air assembly seating* shall be permitted to the capacity factors in Section 1029.6.3 indicated for stepped aisles for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

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F7772

Date Submitted	12/8/2018	**Section**	1005.3.2	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1005.3.2 Other egress components.

The capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.

Exceptions:

1. 1.For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communication* system in accordance with Section 907.5.2.2.
2. 2.Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1029.6.2 indicated for level or ramped *aisles* for *means of egress* components other than *stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.
3. 3.Facilities with ~~outdoor *smoke-protected*~~ <u>*open-air*</u> *assembly seating* shall be permitted to the capacity factors in Section 1029.6.3 indicated for level or ramped *aisles* for *means of egress* components other than *stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

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F7773

Date Submitted	12/8/2018	**Section**	1009.3	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1019.3 Occupancies other than Groups I-2 and I-3.

In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. 1.*Exit access stairways* and *ramps* that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. 2.In Group R-1, R-2 or R-3 occupancies, *exit access stairways* and *ramps* connecting four stories or less serving and contained within an individual *dwelling unit* or *sleeping unit* or *live/work unit.*
3. 3.*Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. 4.*Exit access stairways* and *ramps* in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the *stairway* or *ramp* and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. 5.*Exit access stairways* and *ramps* within an *atrium* complying with the provisions of Section 404.
6. 6.*Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
7. 7.*Exit access stairways* and *ramps* serving smoke protected or open-air assembly seating complying with the *exit access* travel distance requirements of Section 1029.7.
8. 8.*Exit access stairways* and *ramps* serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7773_TextOfModification_1.png

F7774

Date Submitted	12/8/2018	**Section**	1019.3	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1019.3 Occupancies other than Groups I-2 and I-3.

In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. 1.*Exit access stairways* and *ramps* that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. 2.In Group R-1, R-2 or R-3 occupancies, *exit access stairways* and *ramps* connecting four stories or less serving and contained within an individual *dwelling unit* or *sleeping unit* or *live/work unit.*
3. 3.*Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. 4.*Exit access stairways* and *ramps* in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the *stairway* or *ramp* and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. 5.*Exit access stairways* and *ramps* within an *atrium* complying with the provisions of Section 404.
6. 6.*Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
7. 7.*Exit access stairways* and *ramps* serving smoke protected or open-air assembly seating complying with the *exit access* travel distance requirements of Section 1029.7.
8. 8.*Exit access stairways* and *ramps* serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7774_TextOfModification_1.png

F7775

Date Submitted	12/8/2018	**Section**	1029.6	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.6 Capacity of aisle for assembly.

The required capacity of *aisles* shall be not less than that determined in accordance with Section 1029.6.1 where *smoke-protected assembly seating* is not provided and with Section 1029.6.2 ~~or 1029.6.3~~ where *smoke-protected assembly seating* is provided and with section 1029.6.3 where open-air assembly seating is provided.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7775_TextOfModification_1.png

F7776

Date Submitted	12/8/2018	**Section**	1029.6.3	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.6.3 ~~Outdoor smoke-protected~~Open-air assembly seating.

~~The~~ In open-air assembly seating, the required capacity in inches (mm) of *aisles* shall be not less than the total *occupant load* served by the egress element multiplied by 0.08 (2.0 mm) where egress is by stepped *aisle* and multiplied by 0.06 (1.52 mm) where egress is by level *aisles* and ramped *aisles*.

Exception: The required capacity in inches (mm) of *aisles* shall be permitted to comply with Section 1029.6.2 for the number of seats in the ~~outdoor~~ open-air *smoke-protected assembly seating* where Section 1029.6.2 permits less capacity.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7776_TextOfModification_1.png

F7777

Date Submitted	12/8/2018	**Section**	1029.7	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.7 Travel distance.

~~*Exits* and *aisles* shall be so located that the~~ The exit access travel distance ~~to an *exit* door~~ shall ~~be not greater than 200 feet (60 960 mm) measured along the line of travel in nonsprinklered buildings. Travel distance shall be not more than 250 feet (76 200 mm) in sprinklered buildings~~ shall comply with Section 1017. Where *aisles* are provided for seating, the distance shall be measured along the *aisles* and *aisle accessways* without travel over or on the seats.

Exceptions:

1. ~~1.*Smoke-protected assembly seating*: The travel distance from each seat to the nearest entrance to a vomitory or concourse shall not exceed 200 feet (60 960 mm). The travel distance from the entrance to the vomitory or concourse to a *stairway*, *ramp* or walk on the exterior of the building shall not exceed 200 feet (60 960 mm).~~
2. ~~2.Open-air seating: The travel distance from each seat to the building exterior shall not exceed 400 feet (122 m). The travel distance shall not be limited in facilities of Type I or II construction.~~

1. In facilties with *smoke-protected assembly seating* the total exit access travel distance shall be not greater than 400 feet (122 m). That portion of the total permitted exit access travel distance from each seat to the nearest entrance to a vomitory or concourse shall notexceed 200 feet (60 960 mm). The portion of the total permitted exit access travel distance from the entrance to the vomitory or concourse to one of the following shall not exceed 200 feet (60 960mm):
   1.1 The closest riser of an exit accessstairway.
   1.2 The closest slope of an exit access ramp.
   1.3 Anexit.
2. In facilities with open-air assembly seating of Type III, IV or V construction, the exit access travel distance to one of the following shall not exceed 400 feet (122m):
   2.1 The closest riser of an exit accessstairway.
   2.2 The closest slope of an exit access ramp.
   2.3 An exit.
3. In facilities with open-air assembly seating of Type I or II construction, the exit access travel distance shall not belimited.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7777_TextOfModification_1.png

F7778

Date Submitted	12/8/2018	**Section**	1029.8	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinates section with application to open air assemblies

Rationale

Modification coordinates requirements with definition and other sections providing clarity and better focus on needs as well as enforcement based on application and use

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and welfare of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.8 Common path of egress travel.

The *common path of egress travel* shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two *exits*.

Exceptions:

1. 1.For areas serving less than 50 occupants, the *common path of egress travel* shall not exceed 75 feet (22 860 mm).
2. 2.For smoke-protected or ~~*smoke-protected*~~ *open-air assembly seating*, the *common path of egress travel* shall not exceed 50 feet (15 240 mm).

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7778_TextOfModification_1.png

F7790

Date Submitted	12/9/2018	**Section**	1029.8.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinate definition for open-air assembly related section

Rationale

Provides better definition and coordination between sections for open-air assembly seating

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves Code coordination and overall application thus safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code focus and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.8.1 Path through adjacent row.

Where one of the two paths of travel is across the *aisle* through a row of seats to another *aisle*, there shall be not more than 24 seats between the two *aisles*, and the minimum clear width between rows for the row between the two *aisles* shall be 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row between *aisles*.

Exception: For smoke-protected or ~~*smoke-protected*~~ *open-air assembly seating* there shall be not more than 40 seats between the two *aisles* and the minimum clear width shall be 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7790_TextOfModification_1.png

F7791

Date Submitted	12/9/2018	**Section**	1029.9.5	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinate definition for open-air assembly related section

Rationale

Provides better definition and coordination between sections for open-air assembly seating

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves Code coordination and overall application thus safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code focus and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.9.5 Dead end aisles.

Each end of an *aisle* shall be continuous to a cross *aisle*, foyer, doorway, vomitory, concourse or *stairway* in accordance with Section 1029.9.7 having access to an *exit*.

Exceptions:

1. 1.Dead-end *aisles* shall be not greater than 20 feet (6096 mm) in length.
2. 2.Dead-end *aisles* longer than 16 rows are permitted where seats beyond the 16th row dead-end *aisle* are not more than 24 seats from another *aisle*, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.
3. 3.For smoke-protected or ~~*smoke-protected*~~ *open-air assembly seating*, the dead end *aisle* length of vertical *aisles* shall not exceed a distance of 21 rows.
4. 4.For smoke-protected or ~~*smoke-protected*~~ *open-air assembly seating*, a longer dead-end *aisle* is permitted where seats beyond the 21-row dead-end *aisle* are not more than 40 seats from another *aisle*, measured along a row of seats having an *aisle* accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7791_TextOfModification_1.png

F7792

Date Submitted	12/9/2018	**Section**	1016.2.1	**Proponent**	Brad Schiffer
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This clarifies that if an elevators hoistway is protected by a method other than an enclosed elevator lobby by adding a lobby required to allow a fire service access elevator to have a second entrance does not require travel without going through the lobby

Rationale

This clarifies that when to comply when adding an elevator lobby only to allow a second entrance on a fire access elevator it does not require travel to another Exit without travel through the lobby. This will apply when the hoistway opening is not protected by an enclosed elevator lobby.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies when an additional Exit without travel through an elevator is required.

Impact to building and property owners relative to cost of compliance with code

Will save on design and construction of small areas with private elevators.

Impact to industry relative to the cost of compliance with code

Will save on design and construction of small areas with private elevators.

Impact to small business relative to the cost of compliance with code

Will save on design and construction of small areas with private elevators.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Since the elevator hoistways are protected by other than an enclosed elevator lobby this will provide safe access to Exits.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Since the elevator hoistways are protected by other than an enclosed elevator lobby this will provide safe access to Exits.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not.

Does not degrade the effectiveness of the code

Does not

1016.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

1. *Exit access* through an enclosed elevator lobby is permitted. Access to not less than one of the required *exits* shall be provided without travel through the enclosed elevator lobbies required by Section 3006 unless the lobby is only provided to meet the requirements of Section 3007.6 Exception 1. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the *exit* unless direct access to an *exit* is required by other sections of this code.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7792_TextOfModification_1.png

F7793

Date Submitted	12/9/2018	**Section**	1029.12.2.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinate definition for open-air assembly related section

Rationale

Provides better definition and coordination between sections for open-air assembly seating

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves Code coordination and overall application thus safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code focus and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.12.2.1 Dual access.

For rows of seating served by *aisles* or doorways at both ends, there shall be not more than 100 seats per row. The minimum clear width of 12 inches (305 mm) between rows shall be increased by 0.3 inch (7.6 mm) for every additional seat beyond 14 seats where seats have backrests or beyond 21 where seats are without backrests. The minimum clear width is not required to exceed 22 inches (559 mm).

Exception: For smoke-protected or ~~*smoke-protected*~~ *open-air assembly seating*, the row length limits for a 12-inch-wide (305 mm) *aisle accessway*, beyond which the *aisle accessway* minimum clear width shall be increased, are in Table 1029.12.2.1.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7793_TextOfModification_1.png

F7794

Date Submitted	12/9/2018	**Section**	1029.12.2.2	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinate definition for open-air assembly related section

Rationale

Provides better definition and coordination between sections for open-air assembly seating

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None expected

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves Code coordination and overall application thus safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code focus and enforcement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.12.2.2 Single access.

For rows of seating served by an *aisle* or doorway at only one end of the row, the minimum clear width of 12 inches (305 mm) between rows shall be increased by 0.6 inch (15.2 mm) for every additional seat beyond seven seats where seats have backrests or beyond 10 where seats are without back-rests. The minimum clear width is not required to exceed 22 inches (559 mm).

Exception: For smoke-protected or ~~*smoke-protected*~~ *open-air assembly seating*, the row length limits for a 12-inch-wide (305 mm) *aisle accessway*, beyond which the *aisle accessway* minimum clear width shall be increased, are in Table 1029.12.2.1.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7794_TextOfModification_1.png

F7828

Date Submitted	12/10/2018	**Section**	1010.1.9.5.1	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Delete without substitution.

Rationale

This is proposed to be deleted because it is an inconsistent requirement. If there is a concern that a person receiving custodial care might lock themselves in a bathroom or closet, this should be required in Group I-1, not just Group R-4. Also, this should not be a overall minimum code requirement, but more an option for a facility to provide where needed. Literally this would applied to storage closets that are not used by residents and closets that you would not walk into at all.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

possibility to decrease cost.

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

While this might be a valid concern in some facilities for safety, the current provisions should not be applicable to just Group R-4. Free egress from occupied spaces is already required by the code. The current language could be read to apply to all closets, including reach-in closets.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

removes an unnecessary requirement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not.

Does not degrade the effectiveness of the code

see attached pdf

~~1010.1.9.5.1 Closet and bathroom doors in Group R-4 occupancies.~~

~~In Group R-4 occupancies, closet doors that latch in the closed position shall be openable from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.~~

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7828_TextOfModification_1.png

Code Change No: E64-15

Original Proposal

Section(s): 1010.1.9.5.1 (IFC[BE] 1010.1.9.5.1)

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Delete without substitution:

~~**1010.1.9.5.1 (IFC[BE] 1010.1.9.5.1) Closet and bathroom doors in Group R-4 occupancies.** In Group R-4 occupancies, closet doors that latch in the closed position shall be openable from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.~~

Reason: This is proposed to be deleted because it is an inconsistent requirement. If there is a concern that a person receiving custodial care might lock themselves in a bathroom or closet, this should be required in Group I-1, not just Group R-4. Also, this should not be a overall minimum code requirement, but more an option for a facility to provide where needed. Literally this would applied to storage closets that are not used by residents and closets that you would not walk into at all.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This is eliminating a requirement for locks.

Report of Committee Action Hearings

Committee Action: **Approve as Submitted**

Committee Reason: While this might be a valid concern in some facilities for safety, the current provisions should not be applicable to just Group R-4. Free egress from occupied spaces is already required by the code. The current language could be read to apply to all closets, including reach-in closets.

Assembly Action: **None**

Public Comments

Public Comment 1:

John Woestman, Kellen, representing Builders Hardware Manufacturers Association (jwoestman@kellencompany.com) requests Approve as Modified by this Public Comment.

Modify as follows:

1010.1.9.5.1 Closet ~~and bathroom~~ doors ~~in Group R-4 occupancies.~~ ~~In Group R-4 occupancies, closet~~Closet doors that latch in the closed position shall be openable from inside the closet~~, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side~~.

Commenter's Reason: This public comment retains portions of the text proposed by the original proposal to be deleted. Closets with a door that latches are commonly large enough for a person to get inside, especially a child. To reduce the potential of a person getting trapped inside a closet, closet doors should be able to be unlatched from the inside.

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This situation reminds me of the tragedies associated with (very) old refrigerators with doors equipped with mechanical latches – that's most household refrigerators manufactured prior to the Federal "Refrigerator Safety Act" of 1956 which required household refrigerators to be openable from the inside with a force of no more than 15 pounds. Too many children died when trapped inside these refrigerators. Before the use of magnetic sealing of refrigerator doors, refrigerator doors were held shut by mechanical latches. These mechanical latches usually did not have a means for unlatching the door from the inside of the refrigerator.

Final Action Results

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7828_Requirements_E64-15_2.png

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Code Change No: E64-15

Original Proposal

Section(s): 1010.1.9.5.1 (IFC[BE] 1010.1.9.5.1)

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Delete without substitution:

~~**1010.1.9.5.1 (IFC[BE] 1010.1.9.5.1) Closet and bathroom doors in Group R-4 occupancies.** In Group R-4 occupancies, closet doors that latch in the closed position shall be openable from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.~~

Reason: This is proposed to be deleted because it is an inconsistent requirement. If there is a concern that a person receiving custodial care might lock themselves in a bathroom or closet, this should be required in Group I-1, not just Group R-4. Also, this should not be a overall minimum code requirement, but more an option for a facility to provide where needed. Literally this would applied to storage closets that are not used by residents and closets that you would not walk into at all.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This is eliminating a requirement for locks.

Report of Committee Action Hearings

Committee Action: **Approve as Submitted**

Committee Reason: While this might be a valid concern in some facilities for safety, the current provisions should not be applicable to just Group R-4. Free egress from occupied spaces is already required by the code. The current language could be read to apply to all closets, including reach-in closets.

Assembly Action: **None**

Public Comments

Public Comment 1:

John Woestman, Kellen, representing Builders Hardware Manufacturers Association (jwoestman@kellencompany.com) requests Approve as Modified by this Public Comment.

Modify as follows:

1010.1.9.5.1 Closet ~~and bathroom~~ doors ~~in Group R-4 occupancies.~~ ~~In Group R-4 occupancies, closet~~Closet doors that latch in the closed position shall be openable from inside the closet~~, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side~~.

Commenter's Reason: This public comment retains portions of the text proposed by the original proposal to be deleted. Closets with a door that latches are commonly large enough for a person to get inside, especially a child. To reduce the potential of a person getting trapped inside a closet, closet doors should be able to be unlatched from the inside.

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This situation reminds me of the tragedies associated with (very) old refrigerators with doors equipped with mechanical latches

– that's most household refrigerators manufactured prior to the Federal "Refrigerator Safety Act" of 1956 which required household refrigerators to be openable from the inside with a force of no more than 15 pounds. Too many children died when trapped inside these refrigerators. Before the use of magnetic sealing of refrigerator doors, refrigerator doors were held shut by mechanical latches. These mechanical latches usually did not have a means for unlatching the door from the inside of the refrigerator.

Final Action Results

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F7837

Date Submitted	12/13/2018	**Section**	1023.4	**Proponent**	Miguel Botello
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revises section 1023.4 “Openings” to replace “necessary” with the word “require” for consistency within the code.

Rationale

Consistency within the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Provides consistency within the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides consistency within the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

1023.4 Openings.

Interior exit stairway and *ramp* opening protectives shall be in accordance with the requirements of Section 716.

Openings in *interior exit stairways* and *ramps* other than unprotected exterior openings shall be limited to those ~~necessary~~ required for *exit access* to the enclosure from normally occupied spaces and for egress from the enclosure.

Elevators shall not open into *interior exit stairways* and *ramps*.

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F7848

Date Submitted	12/10/2018	**Section**	1010.1.9.7	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarify areas and number of occupants in Group E occupancies that would allow the use of delayed egress locking systems. Allow Group I-1 and I-4 occupancies to have up to 2 delayed egress locking systems in the egress path.

Rationale

The proposal for including Group E is in response to several requests to address the needs of small educational occupancies to help prevent wandering / elopement, especially for the very young, and for special needs students.

As in Group I-2, Group I-1 occupancies may need more than one delayed egress system. For example, if the Group I-1 occupancy is on the 2nd floor, or higher, in a building, a delayed egress system may be needed on the door to the exit stairway on that floor. And a second delayed egress locking system may be needed at the door to the exterior on the ground floor. In Group I-1 and I-4 an additional delayed egress locking system may be highly desirable to help reduce wandering or elopement by occupants.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

there are no new requirements to install delayed egress locking mechanisms, therefore there is only increased cost if the owner elects to install the locking mechanisms.

Impact to industry relative to the cost of compliance with code

none.

Impact to small business relative to the cost of compliance with code

none.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

the use of delayed egress locks in Group E and Group I can prevent unintended wandering by occupants of the building.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

clarifies when delayed egress locks are allowed.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not.

Does not degrade the effectiveness of the code

does not.

1010.1.9.7 Delayed egress.

Delayed egress locking systems shall be permitted to be installed on doors serving ~~any occupancy except Group A, E and H~~ Group B, E, F, I, M, R, S and U occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907. The locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the automatic sprinkler system or automatic fire detection system, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the fire command center and other approved locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

   ~~Exception:~~ Exceptions:

   1. In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.
   2. In Group I-1 or I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combineddelay does not exceed 30 seconds and the building is equipped throughout with an automatic sprinkler system in accordance with Section903.3.1.1.

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6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:
    1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
    2. 6.2.For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
    3. 6.3.The sign shall comply with the visual character requirements in ICC A117.1.

    Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be listed in accordance with UL 294.

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Back

Code Change No: E68-15

Original Proposal

Section(s): 1010.1.9.7; (IFC[BE] 1010.1.9.7)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving ~~any occupancy except Group A, E and H~~ Groups B, F, I, M, R, S and U occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907.

Exception: Delayed egress locking systems shall be permitted to be installed on doors serving Group E occupancies that have an occupant load of 10 or fewer and that are in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907..

1010.1.9.7.1 Delayed egress locking system. The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the automatic sprinkler system or automatic fire detection system, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the fire command center and other approved locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

   Exception: In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:
   6.1 For doors that swing in the direction of egress, the sign shall read: PUSH UNTILALARM SOUNDS. DOOR CAN BE OPENED IN 1530] SECONDS.
   6.2 For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

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Complete Revision History to the 2018 I-Codes: Successful Changes with Public Comments IBC-65

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6.3 The sign shall comply with the visual character requirements in ICC A117.1.

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Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be listed in accordance with UL 294.

Reason: This proposal is in response to several requests to address the needs of small educational occupancies to help prevent wandering / elopement, especially for the very young, and for special needs students.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
No cost impact unless the building owner chooses to install a delayed egress locking system.

Report of Committee Action Hearings

Committee Action: Approved as Modified

Modify as follows:

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving Group B, E, F, I, M, R, S and U occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907.

~~**Exception:** Delayed egress locking systems shall be permitted to be installed on doors serving Group E occupancies that have an occupant load of 10 or fewer and are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907.~~

Committee Reason: There were two modification to this proposal. One modification was to delete the limit of 10 occupants. The proposed text was not clear as to if this was an entire facility or just one classroom. The requirements for sprinklers or smoke or heat detection is an improvement in the level of safety that should allow for a classroom with a higher occupant load to use this option for delayed egress locking systems. The second modification was to delete the new proposed exception and include Group E in the allowances for where delayed egress locking systems can be used. The exception no longer has any additional limits for where delayed egress locking systems can be used. This could be considered editorial based on the approval of the first modification.

Splitting the section into two parts improves clarity. Changing the text to say where these types of locks are permitted is clearer than listing where it is not permitted. Allowing Group E facilities to use delayed egress locking systems helps address the security concerns associated with wandering or 'trigger events' for preschool classes or classrooms for students with special needs.

Assembly Action: None

Public Comments

Public Comment 1:

Jonathan Siu, City of Seattle Department of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee (jon.siu@seattle.gov) requests Approve as Modified by this Public Comment.

Further modify as follows:

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving ~~Group B, E, F, I, M, R, S and U occupancies~~ the following occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907:

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1. Groups B, F, I, M, R, S and U occupancies. -
2. Group E classrooms with an occupant load of less than 50.

Commenter's Reason: This public comment limits the use of delayed egress devices in E occupancies to classrooms with an occupant load less than 50, as opposed to assembly spaces in E occupancies.

The code says that assembly areas in schools get classified as E occupancies (Section 303.1.3). This means that multi-purpose rooms, auditoriums, gymnasiums, and similar spaces associated with a school are E occupancies.

This code change proposal, as modified by the committee, allows delayed egress hardware on every door in an E occupancy, which would include these assembly-type spaces. However, the committee reason statement only talks about classrooms, where there are fewer occupants. We agree it would be appropriate to allow delayed egress hardware on classroom doors, but we do not think it is appropriate to have delayed egress hardware in assembly areas. The proposed change (as modified) also conflicts with the requirements in Section 1010.1.10 for panic hardware.

The modification proposed in this public comment would take care of the both issues by limiting the delayed egress hardware to classroom doors (as appears to have been the intent of the proponents of the original code change), but adds an additional limitation that the classrooms with this hardware must also have an occupant load of less than 50, in order to eliminate the conflict with the panic hardware requirements.

The editorial modification to move the list of occupancies from the main paragraph to a bullet list was necessitated when the E occupancies were separated from the list, in order to eliminate any confusion over whether the sprinklers and alarm systems are required for all the listed occupancies.

Final Action Results

E68-15 AMPC1

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Complete Revision History to the 2018 | Codes: Successful Changes with Public Comments IBC-67

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Back

Code Change No: E69-15

Original Proposal

Section: 1010.1.9.7; (IFC[BE] 1010.1.9.7

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Revise as follows:

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving any occupancy except Group A, E and H in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approvedautomatic smoke* or *heat detection system* installed in accordance with Section 907. The locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the *fire command center* and other *approved* locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egresslocking system.

   Exception-Exceptions:

   1. In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.
   2. In Group I-1 or I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:

   1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTILALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

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Complete Revision History to the 2018 I-Codes: Successful Changes with Public Comments IBC-68

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2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
3. The sign shall comply with the visual character requirements in ICC A117.1.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be listed in accordance with UL 294.

Reason: In Item 5, the new exception is proposed to be revised to include Group I-1 occupancies to allow up to two delayed egress systems. As in Group I-2, Group I-1 occupancies may need more than one delayed egress system. For example, if the Group I-1 occupancy is on the 2nd floor, or higher, in a building, a delayed egress system may be needed on the door to the exit stairway on that floor. And a second delayed egress locking system may be needed at the door to the exterior on the ground floor. In Group I-1 and I-4 an additional delayed egress locking system may be highly desirable to help reduce wandering or elopement by occupants. The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will increase the cost of construction
This is a design option that would allow two delayed egress locking systems in the means of egress, which would increase costs, but it is not a requirement.

Report of Committee Action Hearings

Committee Action: Approved as Submitted

Committee Reason: The addition of Group I-1 and I-4 to the Exceptions in Item 5 provides for consistency in all Group I occupancies where there are concerns for wandering. With the total time limit staying at 30 seconds maximum, security concerns can be addressed without an increase in the level of risk for residents.

Assembly Action: None

Final Action Results

E69-15	**AS**

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F7853

Date Submitted	12/10/2018	**Section**	1010.1.9.8	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarify and improve the consistency of the language in this code section.

Rationale

The changing language is proposed to eliminate redundancy in this section. With revisions to the first sentence, text late in that sentence is redundant as entrance doors to tenant spaces are commonly in the means of egress. It is uncommon that tenant doors are not in the means of egress.

The revisions to the numbered items is to clarify the required functions of the electric locking system. In Item 1, the added text describes what the sensor is required to do upon detecting an approaching occupant. The revisions in the other items clarify requirements for this electrical locking system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none.

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

it clarifies the intent of the building code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1010.1.9.8 Sensor release of electrically locked egress doors.

~~The electric locks on sensor released doors located in a *means of egress* in buildings with an occupancy in~~ Electric locking systems shall be permitted on doors located in the means of egress with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 ~~and entrance doors to tenant spaces in occupancies in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 are permitted~~ where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock.

2. The electric locks ~~doors~~ shall be arranged to unlock by a signal from or loss of power to the sensor.

3. Loss of power to the lock or locking system shall automatically unlock the ~~doors~~ electric lock.

4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—independent of other electronics—and the ~~doors~~ electric lock shall remain unlocked for not less than 30 seconds.

5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the ~~doors~~ electric lock, and the ~~doors~~ electric lock shall remain unlocked until the fire alarm system has been reset.

6. Activation of the building *automatic sprinkler system* or *fire detection system*, where provided, shall automatically unlock the ~~doors~~ electric lock . The ~~doors~~ electric lock shall remain unlocked until the *fire alarm system* has been reset.

7. The door locking system units shall be listed in accordance with UL 294.

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F7864

Date Submitted	12/10/2018	**Section**	1025.5	**Proponent**	Miguel Botello
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Add the exception that minimum width of 1 inch (25 mm) shall not apply to markings listed in accordance with UL 1994.

Rationale

This exception will simply provide an equivalent method of compliance similar to what is already provided for in 1025.1, 1025.2.3, and 1025.2.4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

No

Impact to industry relative to the cost of compliance with code

No

Impact to small business relative to the cost of compliance with code

No

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides an equivalent method of compliance similar to what is provided in 1025.2.1, 1025.2.3, and 1025.2.4.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

1025.2.5 Obstacles

Obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path shall be outlined with markings not less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminous material and black, with the alternating bands not more than 2 inches (51 mm) thick and angled at 45 degrees (0.79 rad). Obstacles shall include, but are not limited to, standpipes, hose cabinets, wall projections and restricted height areas. However, such markings shall not conceal any required information or indicators including but not limited to instructions to occupants for the use of standpipes.

Exception: Minimum width of 1 inch (25 mm) shall not apply to marking listed in accordance with UL 1994.

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F7866

Date Submitted	12/10/2018	**Section**	1026.4	**Proponent**	Miguel Botello
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revise section 1026.4 "Refuge Area" to clarify the requirements for when the actual occupant load is less than the capacity of the exit.

Rationale

Aligns the code with industry standards.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. Would allow building owners to maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have.

Impact to industry relative to the cost of compliance with code

Would permit flexibility in design.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. Would allow building owners to maximize the use of the floor area for their buildings without having to make floor areas usable for refuge areas in order to accommodate more occupants than the area is legally permitted to have.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes, provide occupant clarification.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, provide occupant clarification.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No, provides clarification.

1026.4 Refuge area.

The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the adjoining compartment. The anticipated occupant load from the adjoining compartment shall be based on the capacity of the horizontal exit doors entering the refuge area or the total *occupant load* of the adjoining compartment, whichever is less.

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F7867

Date Submitted	12/10/2018	**Section**	1028.4.1	**Proponent**	Miguel Botello
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revise section 1028.4.1 "Width or capacity" to delete an outdated and unused code requirement for egress courts.

Rationale

Deletes an outdated and unused code requirement.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. This will save money by reducing the need to install a useless guardrail in over sized egress courts.

Impact to industry relative to the cost of compliance with code

Will provide for most cost effective designs.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. This will save money by reducing the need to install a useless guardrail in over sized egress courts.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, updates the code to be in line with industry standards

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

1028.4.1 Width or capacity.

The required capacity of egress courts shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches (1118 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall be not less than 36 inches (914 mm) in width. The required capacity and width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

Exception: Encroachments complying with Section 1005.7.

~~Where an egress court exceeds the minimum required width and the width of such egress court is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the egress court along the path of egress travel. The width of the egress court shall not be less than the required capacity.~~

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F7868

Date Submitted	12/10/2018	**Section**	1029.9.1	**Proponent**	Miguel Botello
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revise section 1029.9.1 "Minimum aisle width" coordination cleanup for minimum aisle width.

Rationale

Provides clarification, defines, and coordinates minimum aisle widths.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Provides clarification of aisle widths.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction. The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, provides clarification and coordination.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No

Does not degrade the effectiveness of the code

No

1029.9.1 Minimum aisle width.

The minimum clear width for aisles shall comply with one of the following:

1. **Forty-eight inches (1219 mm) for stepped aisles having seating on ~~each~~ both sides.**

Exception: Thirty-six inches (914 mm) where the stepped aisles serve less than 50 seats.

2. **Thirty-six inches (914 mm) for stepped aiTsles having seating on only one side.**

Exception: Twenty-three inches (584 mm) between a stepped aisle handrail and seating where a stepped aisle does not serve more than five rows on one side.

3. **Twenty-three inches (584 mm) between a stepped aisle handrail or guard and seating where the stepped aisle is subdivided by a mid-aisle handrail.**

4. **Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.**

Exceptions:

1. **Thirty-six inches (914 mm) where the aisle serves less than 50 seats.**

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2. Thirty inches (762 mm) where the aisle ~~does not serve more than 14 seats~~ serves less than 15 seats and does not serve as part of an accessible route.

5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.

Exception: ~~For other than ramped aisles that serve as part of an accessible route, 30 inches (762 mm) where the ramped aisle does not serve more than 14 seats.~~ Thirty inches (762mm) where the *aisle* serves fewer than 15 seats and does not serve as part of an accessible route.

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F7869

Date Submitted	12/10/2018	**Section**	1026.4.1	**Proponent**	Miguel Botello
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Revises 1026.4 "Capacity" to clarify the capacity requirements for horizontal exit refuge areas for defends in place occupancies.

Rationale

Provides clarification and aligns code with industry standards.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Provides clarification for capacity requirements.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. This is a reference to more specific requirements already in the code.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction. This is a reference to more specific requirements already in the code.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. This is a reference to more specific requirements already in the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, provides clarification.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No.

Does not degrade the effectiveness of the code

No, provides clarification.

1026.4.1 Capacity.

The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m^2) for each occupant to be accommodated therein. Where the *horizontal exit* also forms a *smoke compartment*, the capacity of the refuge for Group I-1, I-2, and I-3 occupancies an Group B *ambulatory care facilities* shall comply with Sections 407.5.1, 408.6.2, 420.4.1 and 422.3.2 as applicable.

~~Exceptions: The net floor area allowable per occupant shall be as follows for the indicated occupancies:~~

~~1.Six square feet (0.6 m^2) per occupant for occupancies in Group I-3.~~
~~2.Fifteen square feet (1.4 m^2) per occupant for ambulatory occupancies in Group I-2.~~
~~3.Thirty square feet (2.8 m^2) per occupant for nonambulatory occupancies in Group I-2.~~

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F7889

Date Submitted	12/11/2018	**Section**	1010.1.9.10	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Permit the use of locked doors for I-1 Occupancies within correction facilities.

Rationale

Group I-1 services are provided in jails, however, they were not in this list of locking arrangements for correctional facilities. Rather than add Group I-1 to this growing list, it seems more appropriate to state that this type of locking should be allowed in all portions of a correctional facility. In addition, this list of Groups is inconsistent with how correctional facilities is defined in Section 308.5. If this system should not be allowed in certain types of jails, it should be regulated by the Condition, not a list of possible uses.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1010.1.9.10 Locking arrangements in <u>buildings within</u> correctional facilities. In ~~occupancies in Groups A-2, A-3, A-4, B, E, F, I-2, I-3, M and S~~ <u>buildings</u> within correctional and detention facilities, doors in *means of egress* serving rooms or spaces occupied by persons whose movements are controlled for security reasons shall be permitted to be locked where equipped with egress control devices that shall unlock manually and by not less than one of the following means:

1. Activation of an *automatic sprinkler system* installed in accordance with Section903.3.1.1
2. Activation of an *approved manual fire alarm box*.
3. A signal from a *constantly attended location*.

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Code Change No: E73-15

Section: 1010.1.9.10; (IFC[BE] 1010.1.9.10

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org); Edward Kulik, Chair, Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1010.1.9.10 Locking arrangements in buildings within correctional facilities. In ~~occupancies in Groups A-2, A-3, A-4, B, E, F, I-2, I-3, M and S~~ buildings within correctional and detention facilities, doors in *means of egress* serving rooms or spaces occupied by persons whose movements are controlled for security reasons shall be permitted to be locked where equipped with egress control devices that shall unlock manually and by not less than one of the following means:

1. Activation of an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. Activation of an *approved manual fire alarm box*.
3. A signal from a *constantly attended location*.

Reason: This section was brought to the attention of the CTC Care committee because Group I-1 services are provided in jails, however, they were not in this list of locking arrangements for correctional facilities. Rather than add Group I-1 to this growing list, it seems more appropriate to state that this type of locking should be allowed in all portions of a correctional facility. In addition, this list of Groups is inconsistent with how correctional facilities is defined in Section 308.5. If this system should not be allowed in certain types of jails, it should be regulated by the Condition, not a list of possible uses.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of requirements.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: There are multiple uses within correctional and detention facilities. The current list is not all inclusive. Elimination of the lists would allow for the detention and correctional facilities to address security needs appropriately.

Assembly Action: **None**

Final Action Results

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F7897

Date Submitted	12/11/2018	**Section**	1011.11	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1014.1

Summary of Modification

clarify that handrails are required on "flights of stairways", not "stairways". The definition of "stairways" includes landings.

Rationale

Other than required handrail extensions, handrails are not required at the outside periphery of landings. However long before we get to 1014.6 Handrail extensions, the use of the defined term "stairways" in sections 1011.11 and 1014.1, supports the interpretation that handrails are required at landings because by definition a stairway includes landings.

Stairway. One or more flights of stairs, either exterior or interior, with the necessary landings and platforms connecting therm, to form a continuous and uninterrupted passage from one level to another.

The problem becomes more apparent when we look at 1014.4 Continuity. Unlike continuity in the IRC there is no limit related to the flight. Confusion is created when 1014.4 is considered with the other handrail section references to stairways as revised in the proposal above. This is a particular problem when considering residential applications.
This proposal provides a simple solution by substituting the correct term "flights of stairways" for "stairways" and clarifies the intent of the code. The term flights of stairways is used throughout the code and in particular within 1014.6 Handrail extensions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1011.11 Handrails.

~~Stairways~~ Flights of stairways shall have handrails on each side and shall comply with Section 1014. Where glass is used to provide the handrail, the handrail shall comply with Section 2407.

Exceptions:

1. ~~Stairways~~ Flights of stairwayswithin dwelling units and flights of spiral stairways are permitted to have a handrail on one side only.

2. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails.

3. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.

4. Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.

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F7902

Date Submitted	12/11/2018	**Section**	1014.1	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1011.11

Summary of Modification

clarifies railing requirements for "flights of stairways", verses "stairways". By definition, "stairways" include landings.

Rationale

Other than required handrail extensions, handrails are not required at the outside periphery of landings. However long before we get to 1014.6 Handrail extensions, the use of the defined term "stairways" in sections 1011.11 and 1014.1, supports the interpretation that handrails are required at landings because by definition a stairway includes landings.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1014.1 Where required.

Handrails serving flights of stairways, ramps, stepped aisles and ramped aisles shall be adequate in strength and attachment in accordance with Section 1607.8. Handrails required for flights of stairways by Section 1011.11 shall comply with Sections 1014.2 through 1014.9. Handrails required for ramps by Section 1012.8 shall comply with Sections 1014.2 through 1014.8. Handrails for stepped aisles and ramped aisles required by Section 1029.15 shall comply with Sections 1014.2 through 1014.8.

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F7909

Date Submitted	12/12/2018	**Section**	1011.16	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

clarifies the construction requirements for permanent ladders.

Rationale

Section 306.5 of the FBC-M provides guidance on where ladders can be used to access equipment and for the technical criteria to construct the ladder (see the reason of the original change for text). The concern is the exact wording of Section 1009.18, Item 6. The list in Section 1011.6 is locations where ladders can be used. Item 6 is revised to limit the reference to where the ladders are permitted in FBC-M Section 306.5. How ladders are to be constructed is moved to the base paragraph so it is clear what technical requirements are to be followed where a ladder is provided in any of the 6 locations.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1011.16 Ladders.

Permanent ladders shall not serve as a part of the means of egress from occupied spaces within a building. Permanent ladders shall be constructed in accordance with Section 306.5 of the Florida Building Code. Permanent ladders shall be permitted to provide access to the following areas:

1. Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.
2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.
4. Elevated levels in Group U not open to the general public.
5. Nonoccupied roofs that are not required to have stairway access in accordance with Section 1011.12.1.
6. Where permitted to access equipment and appliances ~~Ladders shall be constructed~~ in accordance with Section 306.5 of the Florida Building Code, Mechanical.

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Code Change No: E86-15

Original Proposal

Section: 1011.16 (IFC[BE] 1011.16)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1011.16 Ladders. Permanent ladders shall not serve as a part of the *means of egress* from occupied spaces within a building. Permanent ladders shall be constructed in accordance with Section 306.5 of the *International Mechanical Code*. Permanent ladders shall be permitted to provide access to the following areas:

1. Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.
2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.
4. Elevated levels in Group U not open to the general public.
5. Nonoccupied roofs that are not required to have *stairway* access in accordance with Section 1011.12.1.
6. ~~Ladders shall be constructed~~ Where permitted to access equipment and appliances in accordance with Section 306.5 of the *International Mechanical Code*.

Reason: Section 306.5 of the IMC provides guidance on where ladders can be used to access equipment and for the technical criteria to construct the ladder (see the reason of the original change for text). The concern is the exact wording of Section 1009.18, Item 6. The list in Section 1011.6 is locations where ladders can be used. Item 6 is revised to limit the reference to where the ladders are permitted in IMC Section 306.5. How ladders are to be constructed is moved to the base paragraph so it is clear what technical requirements are to be followed where a ladder is provided in any of the 6 locations.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of current requirements.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The construction requirements are moved to the main text. The 6 items now only list the where ladders are permitted. This improves clarity in the code..

Assembly Action: **None**

Final Action Results

E86-15 **AS**

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Code Change No: **E86-15**

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Complete Hot Box History to the 2018 | Codes: Successful Changes with Public Comments IBC-79

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F7961

Date Submitted	12/12/2018	**Section**	1029.9.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is consistency in language and consistency in exceptions to other sections.

Rationale

The intent of this proposal is consistency in language. Added the language as a reminder for the accessible route to the exception for Item 5, but missed the same concern in Item 4 exception 2. The accessible route provisions require 36" width and are required by Section 1009 and 1104 to the wheelchair spaces for ingress and egress. The reminder should be in both locations. If it is felt that this is already addressed, it should be removed from the exception in Item 5. The strike out of 'ramped' in the exception to item 5 is because this item deals with both ramped and level aisles. The limitation of this option to 'ramped' aisles was a mistake. Level aisles are less hazardous than ramped aisles. Changing the language to 'serve less than 15 seats' instead 'does not serve more than 14 seats' is not a technical change. It is for consistency with the language in the other exceptions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarifies and improves enforcement

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves application of access increasing safety and welfare for the public

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code and has no impact on products or related construction

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.9.1 Minimum aisle width.

The minimum clear width for *aisles* shall comply with one of the following:

1. 1.Forty-eight inches (1219 mm) for stepped *aisles* having seating on ~~each side~~ both sides.

   Exception: Thirty-six inches (914 mm) where the stepped *aisles* serve less than 50 seats.

2. 2.Thirty-six inches (914 mm) for stepped *aisles* having seating on only one side.

   Exception: Twenty-three inches (584 mm) between a stepped *aisle handrail* and seating where a stepped *aisle* does not serve more than five rows on one side.

3. 3.Twenty-three inches (584 mm) between a stepped *aisle handrail* or *guard* and seating where the stepped *aisle* is subdivided by a mid-aisle *handrail*.
4. 4.Forty-two inches (1067 mm) for level or ramped *aisles* having seating on both sides.

   Exceptions:

   1. 1.Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.
   2. 2.Thirty inches (762 mm) where the *aisle serves less than 15 seats and* does not serve ~~more than 14 seats~~ as part of an accessible route.

5. 5.Thirty-six inches (914 mm) for level or ramped *aisles* having seating on only one side.

   Exception: ~~For other than ramped *aisles* that serve as part of an *accessible route*, 30~~Thirty inches (762 mm) where the ~~ramped~~ *aisle* serves less than 15 seats and does not serve ~~more than 14 seats~~ as part of an accessible route.

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F7962

Date Submitted	12/12/2018	**Section**	1029.14.3	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1029.14.1, 1029.14.2

Summary of Modification

New definitions to deal with vomitories specific needs

Rationale

The intent of this proposal is to provide language addressing the most common concerns with stepped aisles around vomitories

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Addresses specific condition not addressed in Code giving direction and basis for design guidance and enforcement

Impact to building and property owners relative to cost of compliance with code

Minor and minimizes issues for access

Impact to industry relative to the cost of compliance with code

Minor

Impact to small business relative to the cost of compliance with code

Minor

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

By addressing specific need of use increases safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by clarifying specific needs and design criteria

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Add new section:

1029.14.3 Stepped aisles at vomitories. Stepped aisles that change direction at vomitories shall comply with 1029.14.1 Transitions between a stepped aisle above a vomitory and stepped aisle to the side of vomitory shall comply with 1029.14.2.

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F7963

Date Submitted	12/12/2018	**Section**	1029.14.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1029.14, 1029.14.2

Summary of Modification

New definitions to deal with vomitories specific needs

Rationale

The intent of this proposal is to provide language addressing the most common concerns with stepped aisles around vomitories

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Addresses specific condition not addressed in Code giving direction and basis for design guidance and enforcement

Impact to building and property owners relative to cost of compliance with code

Minor and minimizes issues for access

Impact to industry relative to the cost of compliance with code

Minor

Impact to small business relative to the cost of compliance with code

Minor

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

By addressing specific need of use increases safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by clarifying specific needs and design criteria

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Add new section:

1029.14.1 Stepped aisles that change direction at vomitories. Stepped aisle treads where the stepped aisle changes direction at a vomitory shall have a minimum depth of 11 inches (280 mm) or the stepped aisle tread depth, whichever is greater. The height of a stepped aisle tread above a transition at a vomitory shall comply with Section 1029.13.2.2.

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F7964

Date Submitted	12/12/2018	**Section**	1029.14.2	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1029.14, 1029.14.1

Summary of Modification

New definitions to deal with vomitories specific needs

Rationale

The intent of this proposal is to provide language addressing the most common concerns with stepped aisles around vomitories

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Addresses specific condition not addressed in Code giving direction and basis for design guidance and enforcement

Impact to building and property owners relative to cost of compliance with code

Minor and minimizes issues for access

Impact to industry relative to the cost of compliance with code

Minor

Impact to small business relative to the cost of compliance with code

Minor

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

By addressing specific need of use increases safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code by clarifying specific needs and design criteria

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Add new section:

1029.14.2 Stepped aisle transitions at the top of vomitories. Transitions between the stepped aisle above a vomitory and stepped aisles to the side of a vomitory shall have a minimum depth of 11 inches (280mm) or the stepped aisle depth, whichever is greater.

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F7965

Date Submitted	12/12/2018	**Section**	1029.10.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways.

Rationale

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves definition and provides clarity

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens by clarifying Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.10.1 Transitions ~~and~~ to stairways that maintain stepped aisle riser and tread dimensions.

Stepped *aisles*, transitions and *stairways* that maintain the stepped aisle riser and tread dimensions shall comply with Section 1029.13 as one *exit access* component.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7965_TextOfModification_1.png

F7966

Date Submitted	12/12/2018	**Section**	1029.10.2	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways.

Rationale

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves definition and provides clarity

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens by clarifying Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.10.2 Transitions to stairways that do not maintain stepped aisle riser and tread dimensions.

Transitions ~~to~~ between *stairways* ~~from~~ and stepped *aisles* ~~with~~ having different riser and tread dimensions ~~that differ from the *stairways*~~ shall comply with Sections 1029.10.2.1 through 1029.10.3.

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F7968

Date Submitted	12/12/2018	**Section**	1029.10.2.1	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways.

Rationale

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves definition and provides clarity

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens by clarifying Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.10.2.1 Stairways and stepped aisles in a straight run.

~~Transitions where the *stairway* is~~ Where stairways and stepped aisles are in a straight run ~~from the stepped *aisle*~~ the transition shall have one of the following:

1. ~~a~~ A minimum depth of 22 inches (559 mm) where the treads on the descending side of the transition have greater depth ~~and~~
2. A minimum depth of 30 inches (762 mm) where the treads on the descending side of the transition have lesser depth.

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F7969

Date Submitted	12/12/2018	**Section**	1029.10.2.2	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways.

Rationale

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves definition and provides clarity

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens by clarifying Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.10.2.2 Stairways ~~and stepped aisles~~ that change direction <u>from stepped aisles</u>.

Transitions where the *stairway* changes direction from the stepped *aisle* shall have a minimum depth of 11 inches (280 mm) or the stepped *aisle* tread depth, whichever is greater, between the stepped *aisle* and *stairway*.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7969_TextOfModification_1.png

F7971

Date Submitted	12/12/2018	**Section**	1029.10.3	**Proponent**	Ann Russo5
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways.

Rationale

The intent of this proposal is to provide minor revisions to clarify the language relating to the transitions between stepped aisle and stairways

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Improves definition and provides clarity

Impact to building and property owners relative to cost of compliance with code

None expected

Impact to industry relative to the cost of compliance with code

None expected

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves enforcement and safety of users

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens by clarifying Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Does not

Revise as follows:

1029.10.3 Transition marking.

A distinctive marking stripe shall be provided at each *nosing* or leading edge adjacent to the transition. Such stripe shall be ~~not less than~~ a minimum of 1 inch (25 mm), and ~~not more than~~ a maximum of 2 inches (51 mm), wide. The edge marking stripe shall be distinctively different from the stepped *aisle* contrasting marking stripe.

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F7973

Date Submitted	12/12/2018	**Section**	1013.2	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

allow more flexibility in the height of low-level exit signs

Rationale

The base code provides just a 2-inch tolerance for where the bottom of required low-energy exit signs must be located. This 2-inch window is often challenging for designers and property owners due to field conditions or desired interior finish and trim. For example, several high-end resort properties have installed 12-inch tall base boards in the exit access corridors of the hotels. The base code requirement that the bottom of the sign be located within 10- to 12- inches above the floor level would create issues for these facilities.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal is consistent with the upper bounds permitted by another national code (NFPA 101 Life Safety Code).

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

There is no impact on the level of life safety of the occupants of the Group R-1 occupancies since the low-level exit signs will still be visible below a smoke layer from a fire (in the zone in which the occupants would presumably be crawling.)

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1013.2 Floor-level exit signs in Group R-1.

Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5.

The bottom of the sign shall be not less than 10 inches (254 mm) nor more than ~~12~~ 18 inches (~~305~~ 455 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side.

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F7977

Date Submitted	12/12/2018	**Section**	1013.4	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1111.3

Summary of Modification

clarify code language to require tactile signage only for doors in areas of refuge that lead to the stairway (not to elevator lobbies).

Rationale

The point of the tactile exit signage is to let a visually impaired person know what door they should enter to exit the building. When a stairway is accessed through an area of refuge, this signage is appropriate. Where the area of refuge is at the front of an elevator with standby power, this is not appropriate. Many lobbies have double doors with hold open devices, so there is also the question about where would be the correct location for this signage. This change in language will effectively not require the tactile exit signage at an elevator lobby.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

possible reduction in cost.

Impact to industry relative to the cost of compliance with code

possible reduction in cost.

Impact to small business relative to the cost of compliance with code

possible reduction in cost

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes, less possible confusion

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1013.4 Raised character and braille exit signs.

A sign stating EXIT in visual characters, raised characters and braille and complying with the Florida Building Code, Accessibility shall be provided adjacent to each door to an area of refuge providing direct access to a stairway, an exterior area for assisted rescue, an exit stairway or ramp, an exit passageway and the exit discharge.

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Code Change No: E89-15

Original Proposal

Section: 1013.4, 1111.3; (IFC[BE] 1013.4)

Proponent: Dominic Marinelli, representing United Spinal Association (DMarinelli@accessibility-services.com)

Revise as follows:

1013.4 Raised character and braille exit signs. A sign stating EXIT in visual characters, raised characters and braille and complying with *ICC A117.1* shall be provided adjacent to each door to an *area of refuge* providing direct access to a stairway, an exterior area for assisted rescue, an *exit stairway* or *ramp*, an *exit passageway* and the *exit discharge*.

1111.3 Other signs. Signage indicating special accessibility provisions shall be provided as shown.

1. Each assembly area required to comply with Section 1108.2.7 shall provide a sign notifying patrons of the availability of assistive listening systems. The sign shall comply with ICC A117.1 requirements for visual characters and include the International Symbol of Access for Hearing Loss.

   Exception: Where ticket offices or windows are provided, signs are not required at each assembly area provided that signs are displayed at each ticket office or window informing patrons of the availability of assistive listening systems.

2. At each door to an *area of refuge* providing direct access to the stairway, an exterior area for assisted rescue, an ~~egress~~ *exit stairway, exit passageway and exit discharge, signage shall be provided in accordance with Section 1013.4.*
3. At *areas of refuge*, signage shall be provided in accordance with Section 1009.11.
4. At exterior areas for assisted rescue, signage shall be provided in accordance with Section 1009.11.
5. At two-way communication systems, signage shall be provided in accordance with Section 1009.8.2.
6. In *interior exit stairways* and *ramps*, floor level signage shall be provided in accordance with Section 1023.9.
7. Signs identifying the type of access provided on amusement rides required to be *accessible* by Section 1110.4.8 shall be provided at entries to queues and waiting lines. In addition, where *accessible* unload areas also serve as *accessible* load areas, signs indicating the location of the *accessible* load and unload areas shall be provided at entries to queues and waiting lines. These directional sign characters shall meet the visual character requirements in accordance with ICC A117.1.

Reason: The intent is coordination with the a revision to the next edition of the ICC A117.1 standard for tactile exit signage, Section 504.10.

The point of the tactile exit signage is to let a visually impaired person know what door they should enter to exit the building. When a stairway is accessed through an area of refuge, this signage is appropriate. Where the area of refuge is at the front of an elevator with standby power, this is not appropriate. Many lobbies have double doors with hold open devices, so there is also the question about where would be the correct location for this signage. This change in language will effectively not require the tactile exit signage at an elevator lobby.

Cost Impact: Will not increase the cost of construction
This is a possible reduction in signage.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal will coordinate with the ICC A117.1 revision to tactile exit signage that will be in the next edition. Tactile 'exit' signage is an important part of way finding for persons with vision impairments. Therefore, providing a tactile 'exit' signage at an area of refuge in front of an elevator that does not have direct access to an exit stairway is not good direction.

Assembly Action: **None**

Final Action Results

E89-15 **AS**

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Complete Revision Ready to the 2018 I-Codes. Successful Changes with Public Comments
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IBC-111

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F7986

Date Submitted	12/12/2018	**Section**	1015.3	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

eliminate height of rail requirement to be taken from top of seat in Group R-3 not more than 3 story occupancies and individual dwellings in Group R-2 not more than 3 stories above grade.

Rationale

The purpose of this proposal is coordination between the IBC and IRC. The phrase 'or adjacent fixed seating' was in exception 1 to coordinate with the provisions for guard height in the IRC. Previous edition of the IBC and IRC required guards to be placed adjacent to fixed seating that occurs on areas such as decks where the seat and guard are built integral with the deck. At those locations the guard height was measured from that seat. The requirement to measure from the fixed seating has been removed from the IBC and IRC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

possible reduction in cost

Impact to industry relative to the cost of compliance with code

possible reduction in cost

Impact to small business relative to the cost of compliance with code

possible reduction in cost

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

improves the code by providing continuity with IBC and IRC

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1015.3 Height.

Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the *guard*.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces ~~or adjacent *fixed seating*~~.

2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* also serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

1. The *guard* height in assembly seating areas shall comply with Section 1029.16 as applicable.

5. Along *alternating tread devices* and ships ladders, *guards* where the top rail also serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosing*.

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Code Change No: E92-15

Original Proposal

Section: 1015.3 (IFC[BE] 1015.3)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1015.3 Height. Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the *guard*.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces ~~or adjacent *fixed seating*.~~
2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R- 2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* also serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. The *guard* height in assembly seating areas shall comply with Section 1029.16 as applicable.
5. Along *alternating tread devices* and ships ladders, *guards* where the top rail also serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosing*.

Reason: The purpose of this proposal is coordination between the IBC and IRC. The phrase 'or adjacent fixed seating' was in exception 1 to coordinate with the provisions for guard height in the IRC. Previous edition of the IBC and IRC required guards to be placed adjacent to fixed seating that occurs on areas such as decks where the seat and guard are built integral with the deck. At those locations the guard height was measured from that seat. The requirement to measure from the fixed seating has been removed from the IBC and IRC.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Climbable Guards. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will increase the cost of construction
This proposal could result in a reduction of the required guard height. This is coordination with the IRC.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: Deletion of 'or adjacent fixed seating' in Exception 1 is a coordination with revisions that occurred in the IRC last cycle.

Assembly Action: **None**

Final Action Results

E92-15	**AS**

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Complete Action History to the 2018 I-Codes: Successful Changes with Public Comments

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F8001

Date Submitted	12/12/2018	**Section**	1015.6	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1015.7, FBC-M 304.11

Summary of Modification

clarify language in the code by deleting conflicting language regarding installation of permanent fall arrest/restraint anchorage connector devices.

Rationale

Section 306.5.1 of the IMC requires work platforms with guards for equipment and appliances installed on roofs with a slope 3 in 12 and greater, thus, the exception to Section 304.11 appears to apply only to roofs that are flat and up to 2 in 12 slope. The problem derives from the language referring to placement of anchors along hip or ridge lines and along roof edges. This language is not necessary for the application of the exception. Each building roof system and the equipment upon that roof system that might require access will be different and the anchors needed along with their locations will differ as well. As presently worded there has been some confusion on application and the location requirements spaced every ten feet require unnecessary expense. This proposal eliminates confusion by deleting the unnecessary language leaving the application of the referenced standard to be applied on a case by case basis to fit the specific activities that may occur on the individual roof.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Impact to industry relative to the cost of compliance with code

This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Impact to small business relative to the cost of compliance with code

This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1015.6 Mechanical equipment, systems and devices. *Guards* shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall extend not less than 30 inches (762 mm) beyond each end of such components. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception: ~~*Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.~~

Exception: *Guards* are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

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Code Change No: E96-15

Original Proposal

Section(s): 1015.6 (IFC[BE] 1015.6), 1015.7 (IFC[BE] 1015.6), IMC [BE] 304.11

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1015.6 Mechanical equipment, systems and devices. *Guards* shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall extend not less than 30 inches (762 mm) beyond each end of such components. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

> ~~**Exception:** *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.~~

> **Exception:** *Guards* are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

1015.7 Roof access. *Guards* shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

> ~~**Exception:** *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.~~

> **Exception:** *Guards* are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

2015 International Mechanical Code

Revise as follows:

[BE] 304.11 Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of components that require service. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-

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diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

~~**Exception:** Guards are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire lifetime of the roof covering. The devices shall be re-evaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from roof edges and the open sides of walking surfaces.~~

Exception: Guards are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

Reason: Section 306.5.1 of the IMC requires work platforms with guards for equipment and appliances installed on roofs with a slope 3 in 12 and greater, thus, the exception to Section 304.11 appears to apply only to roofs that are flat and up to 2 in 12 slope. The problem derives from the language referring to placement of anchors along hip or ridge lines and along roof edges. This language is not necessary for the application of the exception. Each building roof system and the equipment upon that roof system that might require access will be different and the anchors needed along with their locations will differ as well. As presently worded there has been some confusion on application and the location requirements spaced every ten feet require unnecessary expense. This proposal eliminates confusion by deleting the unnecessary language leaving the application of the referenced standard to be applied on a case by case basis to fit the specific activities that may occur on the individual roof.

There is another change from this committee to split IMC 304.11 to make it consistent with the IRC that copies this exception. It is the intent of this committee for these changes to be coordinated.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Report of Committee Action Hearings

Committee Action: **Approved as Modified**

Modify proposal as follows:

1015.6 Mechanical equipment, systems and devices. Guards shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of such components. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception: Guards are not required where ~~permanent~~ fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

1015.7 Roof access. Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception: Guards are not required where ~~permanent~~ fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

[BE] 304.11 Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of components that require service. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the International Building Code.

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150

Exception: Guards are not required where ~~permanent~~ fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

Committee Reason: The modification was to delete the requirement for 'permanent' for the anchors. The ANSI/ASSE Z 359.1 standard dos allow for non-permanent anchors.

The proposal as a whole, with the deletion, will allow for anchor systems to be designed based what would best serve the particular project.

Assembly Action:

N

one

Final Action Results

E96-15 **AM**

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F8003

Date Submitted	12/12/2018	**Section**	1015.7	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1015.6, FBC-M 304.11

Summary of Modification

clarify language in the code by deleting conflicting language regarding installation of permanent fall arrest/restraint anchorage connector devices.

Rationale

Section 306.5.1 of the IMC requires work platforms with guards for equipment and appliances installed on roofs with a slope 3 in 12 and greater, thus, the exception to Section 304.11 appears to apply only to roofs that are flat and up to 2 in 12 slope. The problem derives from the language referring to placement of anchors along hip or ridge lines and along roof edges. This language is not necessary for the application of the exception. Each building roof system and the equipment upon that roof system that might require access will be different and the anchors needed along with their locations will differ as well. As presently worded there has been some confusion on application and the location requirements spaced every ten feet require unnecessary expense. This proposal eliminates confusion by deleting the unnecessary language leaving the application of the referenced standard to be applied on a case by case basis to fit the specific activities that may occur on the individual roof.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Impact to industry relative to the cost of compliance with code

This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Impact to small business relative to the cost of compliance with code

This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1015.7 Roof access. *Guards* shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

~~**Exception:** *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.~~

Exception: *Guards* are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

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Code Change No: E96-15

Original Proposal

Section(s): 1015.6 (IFC[BE] 1015.6), 1015.7 (IFC[BE] 1015.6), IMC [BE] 304.11

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1015.6 Mechanical equipment, systems and devices. *Guards* shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall extend not less than 30 inches (762 mm) beyond each end of such components. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

~~**Exception:** *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.~~

Exception: *Guards* are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

1015.7 Roof access. *Guards* shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

~~**Exception:** *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.~~

Exception: *Guards* are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

2015 International Mechanical Code

Revise as follows:

[BE] 304.11 Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of components that require service. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-

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diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

~~**Exception:** Guards are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire lifetime of the roof covering. The devices shall be re-evaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from roof edges and the open sides of walking surfaces.~~

Exception: Guards are not required where fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

Reason: Section 306.5.1 of the IMC requires work platforms with guards for equipment and appliances installed on roofs with a slope 3 in 12 and greater, thus, the exception to Section 304.11 appears to apply only to roofs that are flat and up to 2 in 12 slope. The problem derives from the language referring to placement of anchors along hip or ridge lines and along roof edges. This language is not necessary for the application of the exception. Each building roof system and the equipment upon that roof system that might require access will be different and the anchors needed along with their locations will differ as well. As presently worded there has been some confusion on application and the location requirements spaced every ten feet require unnecessary expense. This proposal eliminates confusion by deleting the unnecessary language leaving the application of the referenced standard to be applied on a case by case basis to fit the specific activities that may occur on the individual roof.

There is another change from this committee to split IMC 304.11 to make it consistent with the IRC that copies this exception. It is the intent of this committee for these changes to be coordinated.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Report of Committee Action Hearings

Committee Action: **Approved as Modified**

Modify proposal as follows:

1015.6 Mechanical equipment, systems and devices. Guards shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of such components. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception: Guards are not required where ~~permanent~~ fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

1015.7 Roof access. Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception: Guards are not required where ~~permanent~~ fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

[BE] 304.11 Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of components that require service. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the International Building Code.

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150

Exception: Guards are not required where ~~permanent~~ fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

Committee Reason: The modification was to delete the requirement for 'permanent' for the anchors. The ANSI/ASSE Z 359.1 standard dos allow for non-permanent anchors.

The proposal as a whole, with the deletion, will allow for anchor systems to be designed based what would best serve the particular project.

Assembly Action:

N

one

Final Action Results

E96-15 **AM**

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F8005

Date Submitted	12/12/2018	**Section**	202	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1017.3

Summary of Modification

modifies definition of "common path"

Rationale

The definition of "common path of egress travel" was modified for the 2015 Edition of the IBC. The intent of the change was to clarify the common path of egress travel and exit access travel distance are measured in the same way. The terminus of each is different, but the route is the same. This logic was based on the last sentence of the 2012 IBC definition, "Common paths of travel shall be included within the permitted travel distance." and the language in 2012 Section 1016.3, "Exit access travel distance shall be measured from the most remote point within a story…"

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

Mod 8005

COMMON PATH OF EGRESS TRAVEL. That portion of ~~the~~ *exit access* travel distance measured from the most remote point ~~within a *story*~~ of each room,area or space to that point where the occupants have separate and distinct access to two exits or exit *access doorways.*

Code Change No: E100-15

Original Proposal

Section: 202, 1017.3; (IFC[BE[1017.3)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

SECTION 202
DEFINITIONS

COMMON PATH OF EGRESS TRAVEL. That portion of ~~the~~ *exit access* travel distance measured from the most remote point ~~within a *story*~~ of each room, area or space to that point where the occupants have separate and distinct access to two exits or exit *access doorways*.

1017.3 Measurement. *Exit access* travel distance shall be measured from the most remote point ~~within a story~~ of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an *exit*.

Exception: In *open parking garages*, *exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

Reason: This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

The definition of "common path of egress travel" was modified for the 2015 Edition of the IBC. The intent of the change was to clarify the common path of egress travel and exit access travel distance are measured in the same way. The terminus of each is different, but the route is the same. This logic was based on the last sentence of the 2012 IBC definition, "Common paths of travel shall be included within the permitted travel distance." and the language in 2012 Section 1016.3, "Exit access travel distance shall be measured from the most remote point within a story..."

If applied literally, it could be interpreted such that the common path of egress travel need be considered from only one point (the most remote) on a given story. Obviously, all potential paths of egress travel need to be considered when establishing occupant remoteness for the purposes of determining multiple exit or exit access doorway requirements. Clarifying that the path of travel originating from any room, area or space should be evaluated when determining common paths of egress travel will eliminate literal interpretations of the current definition. Additionally, the reference to a single story has been eliminated. Section 1006.3 allows for access to exits at an adjacent level. Common path of egress travel requirements could potentially apply to a multi-level design condition.

For purposes of consistency, Section 1017.3 has been modified to indicate that exit access travel distance is measured from all remote points within the means of egress system. The "story" approach is a little simplistic and does not represent the level of detail necessary to properly design or analyze a means of egress system. Additionally, when accessing an exit at an adjacent level, the exit access travel distance at both stories, to include the exit access stairways, is calculated. The single story reference could be misleading. Approval of this modification will clarify the definition of common path of egress travel for the benefit of all users.

Cost Impact: Will not increase the cost of construction
Provisions simply provide clarification of current requirements.

Staff note: There is a published errata to the definition for Common Path of Egress Travel. The errata is incorporated into the definition as existing text.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The change to the definition clarifies that the common path of egress travel can be measured both out of a room to a common corridor or down an exit access stairway to another floor at which point an occupant would have two options for continuing along the means of egress.

The change to Section 1017.3 clarifies that exit access travel distance can also be measured to an exit enclosure on the same level, or down an exit access stairway to an exit enclosure on another floor.

Assembly **Action: Non**

e

Final Action Results

E100-15 **AS**

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8005_Requirements_E100-15_2.png

F8006

Date Submitted	12/12/2018	**Section**	1017.3	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

202

Summary of Modification

modifies definition of "common path"

Rationale

The definition of "common path of egress travel" was modified for the 2015 Edition of the IBC. The intent of the change was to clarify the common path of egress travel and exit access travel distance are measured in the same way. The terminus of each is different, but the route is the same. This logic was based on the last sentence of the 2012 IBC definition, "Common paths of travel shall be included within the permitted travel distance." and the language in 2012 Section 1016.3, "Exit access travel distance shall be measured from the most remote point within a story…"

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1017.3 Measurement.

Exit access travel distance shall be measured from the most remote point ~~within a story~~ of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit.

Exception: In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.

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Code Change No: E100-15

Original Proposal

Section: 202, 1017.3; (IFC[BE[1017.3)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

SECTION 202
DEFINITIONS

COMMON PATH OF EGRESS TRAVEL. That portion of ~~the~~ *exit access* travel distance measured from the most remote point ~~within a *story*~~ of each room, area or space to that point where the occupants have separate and distinct access to two exits or exit *access doorways*.

1017.3 Measurement. *Exit access* travel distance shall be measured from the most remote point ~~within a story~~ of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an *exit*.

Exception: In *open parking garages*, *exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

Reason: This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

The definition of "common path of egress travel" was modified for the 2015 Edition of the IBC. The intent of the change was to clarify the common path of egress travel and exit access travel distance are measured in the same way. The terminus of each is different, but the route is the same. This logic was based on the last sentence of the 2012 IBC definition, "Common paths of travel shall be included within the permitted travel distance." and the language in 2012 Section 1016.3, "Exit access travel distance shall be measured from the most remote point within a story..."

If applied literally, it could be interpreted such that the common path of egress travel need be considered from only one point (the most remote) on a given story. Obviously, all potential paths of egress travel need to be considered when establishing occupant remoteness for the purposes of determining multiple exit or exit access doorway requirements. Clarifying that the path of travel originating from any room, area or space should be evaluated when determining common paths of egress travel will eliminate literal interpretations of the current definition. Additionally, the reference to a single story has been eliminated. Section 1006.3 allows for access to exits at an adjacent level. Common path of egress travel requirements could potentially apply to a multi-level design condition.

For purposes of consistency, Section 1017.3 has been modified to indicate that exit access travel distance is measured from all remote points within the means of egress system. The "story" approach is a little simplistic and does not represent the level of detail necessary to properly design or analyze a means of egress system. Additionally, when accessing an exit at an adjacent level, the exit access travel distance at both stories, to include the exit access stairways, is calculated. The single story reference could be misleading. Approval of this modification will clarify the definition of common path of egress travel for the benefit of all users.

Cost Impact: Will not increase the cost of construction
Provisions simply provide clarification of current requirements.

Staff note: There is a published errata to the definition for Common Path of Egress Travel. The errata is incorporated into the definition as existing text.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The change to the definition clarifies that the common path of egress travel can be measured both out of a room to a common corridor or down an exit access stairway to another floor at which point an occupant would have two options for continuing along the means of egress.

The change to Section 1017.3 clarifies that exit access travel distance can also be measured to an exit enclosure on the same level, or down an exit access stairway to an exit enclosure on another floor.

Assembly **Action: Non**

e

Final Action Results

E100-15 **AS**

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8006_Requirements_E100-15_2.png

F8009

Date Submitted	12/12/2018	**Section**	1019.3	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

clarifies when exit access stairways and ramps must be enclosed.

Rationale

This exception previously read as follows. "Stairways are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities." The revision last cycle had an unintended consequence. The current text can be read differently without 'between'. It could be read to allow open stairways serving the main assembly floor to be open exit access stairways.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none, its a clarification

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes, clarifies intent of code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1019.3 Occupancies other than Groups I-2 and I-3.

In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. Exit access stairways and ramps that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.
3. Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. Exit access stairways and ramps within an atrium complying with the provisions of Section 404.
6. Exit access stairways and ramps in open parking garages that serve only the parking garage.
7. Exit access stairways and ramps serving open-air seating complying with the exit access travel distance requirements of Section 1029.7.
8. Exit access stairways and ramps ~~serving~~ between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.

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Code Change No: E104-15

Original Proposal

Section: 1019.3 (IFC [BE] 1019.3)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. *Exit access stairways* and *ramps* that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, *exit access stairways* and *ramps* connecting four stories or less serving and contained within an individual *dwelling unit* or *sleeping unit* or *live/work unit*.
3. *Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. *Exit access stairways* and *ramps* in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the *stairway* or *ramp* and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA
   13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. *Exit access stairways* and *ramps* within an *atrium* complying with the provisions of Section 404.
6. *Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
7. *Exit access stairways* and *ramps* serving open-air seating complying with the *exit access* travel distance requirements of Section 1029.7.
8. *Exit access stairways* and *ramps* ~~serving~~ between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.

Reason: This exception previously read as follows. "Stairways are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities." The revision last cycle had an unintended consequence. The current text can be read differently without 'between'. It could be read to allow open stairways serving the main assembly floor to be open exit access stairways.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Unenclosed Exit Stairs. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website. http://www.iccsafe.org/cs/CTC/Pages/default.aspx

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of provisions. There is no change in requirements.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal fixes a glitch that ended up in the code last cycle. The change will fix the misinterpretation that the exit access stairway serving the main floor are exit access stairways.

Assembly Action:

Non

e

Final Action Results

E104-15 **AS**

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8009_Requirements_E104-15_2.png

F8012

Date Submitted	12/12/2018	**Section**	1020.2	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Coordinate table 1020.2 with defined term for ambulatory care facilities.

Rationale

The intent of this proposal is coordination of this table with the defined term for ambulatory care facilities

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes, coordinates language in the code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

TABLE 1020.2

MINIMUM CORRIDOR WIDTH

OCCUPANCY	MINIMUM WIDTH (inches)
Any facilities not listed below	44
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24
With an occupant load of less than 50	36
Within a dwelling unit	36
In Group E with a corridor having an occupant load of 100 or more	72
In corridors and areas serving stretcher traffic in ~~occupancies where patients receive outpatient medical care that causes the patient to be incapable of self-preservation~~ ambulatory care facilities	72
Group I-2 in areas where required for bed movement	96

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Code Change E106-15

Original Proposal

Section: Table 1020.2; (IFC[BE] Table 1020.2)

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

Revise as follows:

TABLE 1020.2 (1020.2) MINIMUM CORRIDOR WIDTH

OCCUPANCY	MINIMUM WIDTH (inches)
Any facilities not listed below	44
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24
With an occupant load of less than 50	36
Within a *dwelling unit*	36
In Group E with a *corridor* having an occupant load of 100 or more	72
In corridors and areas serving stretcher traffic in ~~occupancies where patients receive outpatient medical care, that causes the patient to be incapable of self-preservation~~ ambulatory care facilities	72
Group I-2 in areas where required for bed movement	96

For SI: 1 inch = 25.4 mm.

Reason: The intent of this proposal is coordination of this table with the defined term for ambulatory care facilities

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction This is a clarification; therefore, there is no change in cost.

Staff note: There is a published errata to Table 1020.2. The errata has been incorporated into the table as existing text.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal fixes a glitch that ended up in the code last cycle. The change will fix the misinterpretation that the exit access stairway serving the main floor are exit access stairways.

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Assembly Action:

Non

e

Final Action Results

E106-15 **AS**

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F8015

Date Submitted	12/12/2018	**Section**	1020.4	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Remove Single Exit, R-4 occupancies from the dead-end exceptions.

Rationale

Single exit building do not have dead end corridors, therefore this should be removed. Group R-4 are permitted to have single exits per Section 1006.3.2 Item 4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes - clarifies the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1020.4 Dead ends.

Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Condition 2, 3 or 4, the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, ~~R-4~~, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm).
3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

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Code Change E107-15

Original Proposal

Section: 1020.4 (IFC[BE] 1020.4)

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Revise as follows:

1020.4 Dead ends. Where more than one *exit* or *exit access doorway* is required, the *exit access* shall be arranged such that there are no dead ends in *corridors* more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Condition 2, 3 or 4, the dead end in a *corridor* shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2~~, R-4~~, S and U, where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the length of the dead-end *corridors* shall not exceed 50 feet (15 240 mm).
3. A dead-end *corridor* shall not be limited in length where the length of the dead-end *corridor* is less than 2.5 times the least width of the dead-end *corridor*.

Reason: none

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction This is eliminating an erroneous requirement.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: Group R-4 should be removed from the list for dead ends. Group R-4 facilities are permitted to be single exit buildings, so the dead end provisions would never be practical.

Assembly Action: **Non e**

Final Action Results

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E107-15 **AS**

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F8018

Date Submitted	12/12/2018	**Section**	1023.1	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Remove the separation requirement between and interior exit stairway or ramp and an exit passageway extension when they are both pressurized in accordance with Section 909.20.5

Rationale

Pressurized stairs often discharge through an exit passageway. The exit passageway is also typically required to be pressurized since it is a continuation of the pressurized stair enclosure. The system providing pressurization of the stair and passageway is typically the same system. Technical compliance would require separate systems if a separation is required to be maintained. The introduction of a door and fire barrier between the exit passageway and the stair creates an obstruction to airflow which inhibits the pressurization of the stair and passageway. The provision of a separation does not provide any added safety and could also impede egress.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

This code change will reduce the cost of construction where pressurized stairs discharge through an exit passageway extension. The door and fire barrier between the exit passageway extension and the stair would not be required.

Impact to industry relative to the cost of compliance with code

This code change will reduce the cost of construction where pressurized stairs discharge through an exit passageway extension. The door and fire barrier between the exit passageway extension and the stair would not be required.

Impact to small business relative to the cost of compliance with code

This code change will reduce the cost of construction where pressurized stairs discharge through an exit passageway extension. The door and fire barrier between the exit passageway extension and the stair would not be required.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1023.3.1 Extension.

Where interior exit stairways and ramps are extended to an exit discharge or a public way by an exit passageway, the interior exit stairway and ramp shall be separated from the exit passageway by a fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 711, or both. The fire-resistance rating shall be not less than that required for the interior exit stairway and ramp. A fire door assembly complying with Section 716.5 shall be installed in the fire barrier to provide a means of egress from the interior exit stairway and ramp to the exit passageway. Openings in the fire barrier other than the fire door assembly are prohibited. Penetrations of the fire barrier are prohibited.

Exceptions

1.Penetrations of the fire barrier in accordance with Section 1023.5 shall be permitted.

2. Separation between an interior exit stairway or ramp and the exit passageway extension shall not be required where there are no openings into the exit passageway extension.

3. Separation between an interior exit stairway or ramp and the exit passageway extension shall not be required when the interior exit stair and the exit passageway extension are pressurized in accordance with Section 909.20.5

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Code Change No: E110-15

Code Change E110-15

Original Proposal

Section: 1023.3.1; (IFC[BE] 1023.3.1)

Proponent: Raymond Grill, Arup, representing Arup (ray.grill@arup.com)

Revise as follows:

1023.3.1 Extension. Where *interior exit stairways* and *ramps* are extended to an *exit discharge* or a *public way* by an *exit passageway*, the *interior exit stairway* and *ramp* shall be separated from the *exit passageway* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than that required for the *interior exit stairway* and *ramp*. A *fire door* assembly complying with Section *716.5* shall be installed in the *fire barrier* to provide a *means of egress* from the *interior exit stairway* and *ramp* to the *exit passageway*. Openings in the *fire barrier* other than the *fire door* assembly are prohibited. Penetrations of the *fire barrier* are prohibited.

Exceptions:

1. Penetrations of the *fire barrier* in accordance with Section 1023.5 shall be permitted.
2. Separation between an *interior exit stairway* or *ramp* and the *exit passageway* extension shall not be required where there are no openings into the *exit passageway* extension.
3. Separation between an *interior exit stairway* or *ramp* and the *exit passageway* extension shall not be required when the interior exit stair and the exit passageway extension are pressurized in accordance with Section 909.20.5.

Reason: Pressurized stairs often discharge through an exit passageway. The exit passageway is also typically required to be pressurized since it is a continuation of the pressurized stair enclosure. The system providing pressurization of the stair and passageway is typically the same system. Technical compliance would require separate systems if a separation is required to be maintained. The introduction of a door and fire barrier between the exit passageway and the stair creates an obstruction to airflow which inhibits the pressurization of the stair and passageway. The provision of a separation does not provide any added safety and could also impede egress.

Cost Impact: Will not increase the cost of construction
This code change will reduce the cost of construction where pressurized stairs discharge through an exit passageway extension. The door and fire barrier between the exit passageway extension and the stair would not be required.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: Group R-4 should be removed from the list for dead ends. Group R-4 facilities are permitted to be single exit buildings, so the dead end provisions would never be practical.

Assembly Action: **None**

Final Action Results

E110-15	**AS**

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Code Change No: E110-15

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F8023

Date Submitted	12/12/2018	**Section**	1023.5	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

allow security system equipment to penetrate into or through interior exit stairs and ramps.

Rationale

This allowance for security systems to penetrate a stairway enclosure is appropriate. Security systems are needed for occupant safety. These systems can also be used for remote assessment of a stairway during an emergency. This is coordinated with NFPA 101.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction
The proposed language addressed a limitation in the code regarding security systems being able to penetrate exit enclosures. If anything, the cost of construction will be decreased by allowing an acceptable way for installing such systems.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction
The proposed language addressed a limitation in the code regarding security systems being able to penetrate exit enclosures. If anything, the cost of construction will be decreased by allowing an acceptable way for installing such systems.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction
The proposed language addressed a limitation in the code regarding security systems being able to penetrate exit enclosures. If anything, the cost of construction will be decreased by allowing an acceptable way for installing such systems.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Building security systems, including cameras in stairways, are becoming more prevalent. If properly protected, a limited number of penetrations for security systems will not result in an unacceptable level of safety.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1023.5 Penetrations. Penetrations into or through *interior exit stairways* and *ramps* are prohibited except for equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and security systems and electrical raceway serving the *interior exit stairway* and *ramp* and terminating at a steel box not exceeding 16 square inches (0.010 m_2). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent *interior exit stairways* and *ramps*.

Exception: Membrane penetrations shall be permitted on the outside of the *interior exit stairway* and *ramp*. Such penetrations shall be protected in accordance with Section 714.3.2.

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Code Change No: E112-15

Original Proposal

Section: 1023.5; (IFC[BE] 1023.5)

Proponent: William Koffel, representing Firestop Contractors International Association (wkoffel@koffel.com)

Revise as follows:

1023.5 Penetrations. Penetrations into or through *interior exit stairways* and *ramps* are prohibited except for equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and security systems and electrical raceway serving the *interior exit stairway* and *ramp* and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent *interior exit stairways* and *ramps*.

> **Exception:** Membrane penetrations shall be permitted on the outside of the *interior exit stairway* and *ramp*. Such penetrations shall be protected in accordance with Section 714.3.2.

Reason: Building security systems, including cameras in stairways, are becoming more prevalent. If properly protected, a limited number of penetrations for security systems will not result in an unacceptable level of safety. NFPA 101-2015 requires stairway video monitoring in high-rise buildings having an occupant load of 4,000 or more persons.

Cost Impact: Will not increase the cost of construction
The proposed language addressed a limitation in the code regarding security systems being able to penetrate exit enclosures. If anything, the cost of construction will be decreased by allowing an acceptable way for installing such systems.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This allowance for security systems to penetrate a stairway enclosure is appropriate. Security systems are needed for occupant safety. These systems can also be used for remote assessment of a stairway during an emergency. This is coordinated with NFPA 101.

Assembly **Action: Non**

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Final Hearing Results

E112-15 **AS**

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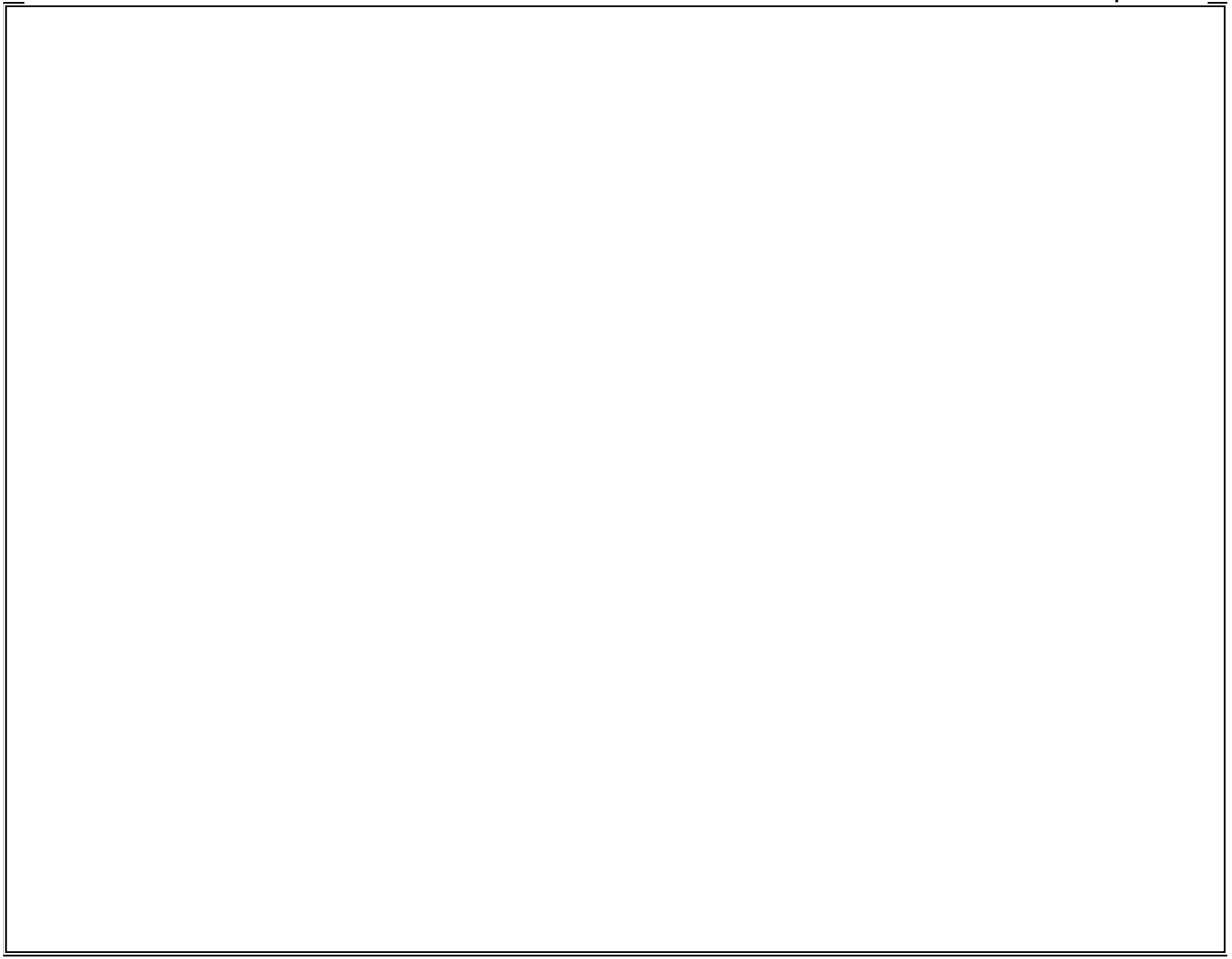

F8046

Date Submitted	12/12/2018	**Section**	1015.3	**Proponent**	Ann Russo4
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

In Group F occupancies the tip of the guard can be 34" to 38" and eliminates the 42" guard if, the exit access stairways serve three stories or less, and such stairs are not open to the public, and the top of the guard also serves as handrail.

Rationale

Federal OSHA requirements restrict industrial stairway guard to a maximum of 34";it also intends that the top rail will be used as a handrail. FBC requires a guard at 42". This proposal attempts to find a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings. Gives factory workers the ability to work,carry tools in tight spaces they are familiar with , to maneuver less awkwardly. It is already used int the FBC Group r-3 and in individual dwelling units of R-2.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

It will be a decrease in cost to building and property owners as current code requirements adds additional rail and cost.

Impact to industry relative to the cost of compliance with code

It will be a decrease in cost to industry entity as current code requirements adds additional rail and cost.

Impact to small business relative to the cost of compliance with code

It will be a decrease in cost to industry entity as current code requirements adds additional rail and cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public y allowing workers to work more efficiently while still being safe in tight areas

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by providing a better method by finding a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities as this is already a current code requirement that does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code

Increases the effectiveness of the code by finding a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings.

Revise as follows:

1015.3 Height.

Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. 1.From the adjacent walking surfaces.
2. 2.On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. 3.On *ramps* and ramped *aisles*, from the *ramp* surface at the *guard*.

Exceptions:

1. 1.For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces or adjacent *fixed seating*.
2. 2.For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. 3.For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* also serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. 4.The *guard* height in assembly seating areas shall comply with Section 1029.16 as applicable.
5. 5.Along *alternating tread devices* and ships ladders, *guards* where the top rail also serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosing*.
6. <u>6. In Group F occupancies, where exit access stairways serve three stories or less and such stairs are not open to the public, where the top of the guard also serves as a handrail, the top of the guard shall be not less than the 34 inches (864 mm) and not more than 38 inches 9965 mm) measured from ta line connecting the leading edges of the treads</u>

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F8047

Date Submitted	12/12/2018	**Section**	1015.3	**Proponent**	Ann Russo4
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

In Group F occupancies the tip of the guard can be 34" to 38" and eliminates the 42" guard if, the exit access stairways serve three stories or less, and such stairs are not open to the public, and the top of the guard also serves as handrail.

Rationale

Federal OSHA requirements restrict industrial stairway guard to a maximum of 34";it also intends that the top rail will be used as a handrail. FBC requires a guard at 42". This proposal attempts to find a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings. Gives factory workers the ability to work,carry tools in tight spaces they are familiar with , to maneuver less awkwardly. It is already used int the FBC Group r-3 and in individual dwelling units of R-2.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

It will be a decrease in cost to building and property owners as current code requirements adds additional rail and cost.

Impact to industry relative to the cost of compliance with code

It will be a decrease in cost to industry as current code requirements adds additional rail and cost.

Impact to small business relative to the cost of compliance with code

It will be a decrease in cost to small business as current code requirements adds additional rail and cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public y allowing workers to work more efficiently while still being safe in tight areas

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by providing a better method by finding a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities as this is already a current code requirement that does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code

Increases the effectiveness of the code by finding a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings.

Revise as follows:

1015.3 Height.

Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. 1.From the adjacent walking surfaces.
2. 2.On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. 3.On *ramps* and ramped *aisles*, from the *ramp* surface at the *guard*.

Exceptions:

1. 1.For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces or adjacent *fixed seating*.
2. 2.For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. 3.For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* also serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. 4.The *guard* height in assembly seating areas shall comply with Section 1029.16 as applicable.
5. 5.Along *alternating tread devices* and ships ladders, *guards* where the top rail also serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosing*.
6. <u>6. In Group F occupancies, where exit access stairways serve three stories or less and such stairs are not open to the public, where the top of the guard also serves as a handrail, the top of the guard shall be not less than the 34 inches (864 mm) and not more than 38 inches 9965 mm) measured from ta line connecting the leading edges of the treads</u>

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F8097

Date Submitted	12/13/2018	**Section**	1010.1.9.9	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1010.1.10

Summary of Modification

Allow electrically locked egress doors in occupancies that have a lower risk than those currently allowed. Also clarifies all types of electrical locking systems such as panic hardware, fire exit hardware, or door knobs or levers.

Rationale

This "special locking arrangement" allows for immediate egress with one-handed operation of the door hardware. Code officials and specifiers have asked why this option is allowed in only these occupancies. No reason is known other than the current allowed occupancies in Section 1010.1.9.9 match those in Section 1010.1.9.8.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Impact to industry relative to the cost of compliance with code

No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Impact to small business relative to the cost of compliance with code

No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1010.1.9.9 ~~Electromagnetically~~ Door Hardware Release of Electrically Locked Egress doors.

Door hardware release of electric locking systems shall be permitted on doors ~~Doors~~ in the *means of egress* with any occupancy except in Group H ~~in buildings with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and~~ where installed and operated in accordance with all of the following:

1. 1The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. 2The door hardware is capable of being operated with one hand.
3. 3Operation of the door hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
4. 4Loss of power to the electric locking system automatically unlocks the door.
5. 5Where *panic* or *fire exit hardware* is required by Section 1010.1.10, operation of the *panic* or *fire exit hardware* also releases the ~~electromagnetic~~ electric lock.
6. 6The locking system units shall be listed in accordance with UL 294.

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Code Change No: E72-15

Original Proposal

Section(s): 1010.1.9.9, 1010.1.10; (IFC [BE] 1010.1.9.9, 1010.1.10)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1010.1.9.9 ~~Electromagnetically~~ Door hardware release of electrically locked egress doors. ~~Doors~~ Door hardware release of electric locking systems shall be permitted on doors in the *means of egress* with any occupancy except in Group H ~~in buildings with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and~~ where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.1.9.5.
3. Operation of the door hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where *panic* or *fire exit hardware* is required by Section 1010.1.10, operation of the *panic* or *fire exit hardware* also releases the ~~electromagnetic~~ electric lock.
6. The locking system units shall be listed in accordance with UL 294.

1010.1.10 Panic and fire exit hardware. Doors serving a Group H occupancy and doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware* or *fire exit hardware*.

Exceptions:

1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be ~~electromagnetically~~ electronically locked in accordance with Section 1010.1.9.9.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with *exit* or *exit access doors*, shall be equipped with *panic hardware* or *fire exit hardware*. The doors shall swing in the direction of egress travel.

Reason: This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.
This "special locking arrangement" allows for immediate egress with one-handed operation of the door hardware. Code officials and specifiers have asked why this option is allowed in only these occupancies. No reason is known other than the current allowed occupancies in Section 1010.1.9.9 match those in Section 1010.1.9.8.

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Further, revisions clarify this section of the code to address required functions of all types of electrical locking systems which are operated (i.e. unlocked) by operation of the door hardware such as panic hardware, fire exit hardware, or door knobs or levers (where panic or fire exit hardware is not required or not utilized). Electromagnetic locks are the most common type of electrical locks, but not the only type of electric locking hardware which may be selected by the designer, specifier, and / or building owner or occupant.

Regardless of the type of electrical locking system, this section permits and requires the door hardware to be device which causes the electrical lock to unlock immediately, allowing egress.

Cost Impact: Will not increase the cost of construction
No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Report of Committee Action Hearings

Committee Action: Approved as Modified

Modify proposal as follows:

1010.1.9.9 Door hardware release of electrically locked egress doors. Door hardware release of electric locking systems shall be permitted on doors in the means of egress with any occupancy except in Group H where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.1.9.5.
3. Operation of the door hardware directly interrupts the power to the ~~electromagnetic~~ electric lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where panic or fire exit hardware is required by Section 1010.1.10, operation of the panic or fire exit hardware also releases the electric lock.
6. The locking system units shall be listed in accordance with UL 294.

Committee Reason: The modification to Item 3 is for the terminology to be consistent throughout the section and is consistent with the main proposal.

There was no technical justification for not allowing these types of locking systems in occupancies that have a lower risk than those listed. The other changes correlate and clarifies terminology.

Assembly Action: N

one

Final Action Results

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F8101

Date Submitted	12/13/2018	**Section**	1010.1.9.11	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Allow the 5th and 6th floors of non-high rise buildings to use locking hardware on stairway means of egress doors - the same as currently allowed on floors 1 thru 4.

Rationale

As currently written, the 2015 IBC allows stairway doors to be locked from the side opposite egress on stories one through four in Exception 3 of Section 1010.1.9.11 and in high rise buildings (typically seven stories and higher) in Section 403.5.3. By deleting the limitation on the number of stories in this section, stair doors on the fifth and sixth stories would be allowed to be locked from the non-egress side consistent with doors on all other floors.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

yes

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1.

1010.1.9.11 Stairway doors.

Interior *stairway means of egress* doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. *Stairway* discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. In ~~*stairways* serving not more than four stories,~~ Stairway exit doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the *fire command center*, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.
4. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single *exit stairway* where permitted in Section 1006.3.2.
5. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the *dwelling unit* is from a single *exit stairway* where permitted in Section 1006.3.2.

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Code Change No: E72-15

Original Proposal

Section(s): 1010.1.9.9, 1010.1.10; (IFC [BE] 1010.1.9.9, 1010.1.10)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

1010.1.9.9 ~~Electromagnetically~~ Door hardware release of electrically locked egress doors. ~~Doors~~ Door hardware release of electric locking systems shall be permitted on doors in the *means of egress* with any occupancy except in Group H ~~in buildings with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and~~ where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.1.9.5.
3. Operation of the door hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where *panic* or *fire exit hardware* is required by Section 1010.1.10, operation of the *panic* or *fire exit hardware* also releases the ~~electromagnetic~~ electric lock.
6. The locking system units shall be listed in accordance with UL 294.

1010.1.10 Panic and fire exit hardware. Doors serving a Group H occupancy and doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware* or *fire exit hardware*.

Exceptions:

1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be ~~electromagnetically~~ electronically locked in accordance with Section 1010.1.9.9.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with *exit* or *exit access doors*, shall be equipped with *panic hardware* or *fire exit hardware*. The doors shall swing in the direction of egress travel.

Reason: This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.
This "special locking arrangement" allows for immediate egress with one-handed operation of the door hardware. Code officials and specifiers have asked why this option is allowed in only these occupancies. No reason is known other than the current allowed occupancies in Section 1010.1.9.9 match those in Section 1010.1.9.8.

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Further, revisions clarify this section of the code to address required functions of all types of electrical locking systems which are operated (i.e. unlocked) by operation of the door hardware such as panic hardware, fire exit hardware, or door knobs or levers (where panic or fire exit hardware is not required or not utilized). Electromagnetic locks are the most common type of electrical locks, but not the only type of electric locking hardware which may be selected by the designer, specifier, and / or building owner or occupant.

Regardless of the type of electrical locking system, this section permits and requires the door hardware to be device which causes the electrical lock to unlock immediately, allowing egress.

Cost Impact: Will not increase the cost of construction
No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Report of Committee Action Hearings

Committee Action: Approved as Modified

Modify proposal as follows:

1010.1.9.9 Door hardware release of electrically locked egress doors. Door hardware release of electric locking systems shall be permitted on doors in the means of egress with any occupancy except in Group H where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.1.9.5.
3. Operation of the door hardware directly interrupts the power to the ~~electromagnetic~~ electric lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where panic or fire exit hardware is required by Section 1010.1.10, operation of the panic or fire exit hardware also releases the electric lock.
6. The locking system units shall be listed in accordance with UL 294.

Committee Reason: The modification to Item 3 is for the terminology to be consistent throughout the section and is consistent with the main proposal.

There was no technical justification for not allowing these types of locking systems in occupancies that have a lower risk than those listed. The other changes correlate and clarifies terminology.

Assembly Action:

N

one

Final Action Results

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F8109

Date Submitted	12/13/2018	**Section**	1010.1.10	**Proponent**	Lawrence Cohan
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

limits panic hardware to swinging doors.

Rationale

UL 305 is the standard by which panic and fire exit hardware is typically listed. UL 305 applies to outward-opening doors and as such does not apply to the special doors addressed in Section 1010.1.4. However, some have interpreted the current text in 1010.1.10 to require panic hardware or fire exit hardware on special doors, such as special purpose horizontal sliding, accordian or folding doors. The proposed text clarifies that panic and fire exit hardware is required for pivoted or side-hinged swinging doors.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

none

Impact to building and property owners relative to cost of compliance with code

none

Impact to industry relative to the cost of compliance with code

none

Impact to small business relative to the cost of compliance with code

none

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

yes

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

clarifies the intent of code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not

Does not degrade the effectiveness of the code

does not

1010.1.10 Panic and fire exit hardware. ~~Doors~~ Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware* or *fire exit hardware*.

Exceptions:

1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.9

2. Doors serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with Section 1010.1.9.9.

3.3. Outdoor gates from residential and commercial swimming pools or swimming pool decks, except where the pool deck serves as a portion of the means of egress of a building or has an occupant load of 300 or greater.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with exit or exit access doors, shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.

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Code Change No. E77-15

Original Proposal

Section: 1010.1.10; (IFC[BE] 1010.1.10)

Proponent: William Koffel, representing WonDoor (wkoffel@koffel.com)

Revise as follows:

1010.1.9.11 Panic and fire exit hardware. ~~Doors~~ Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware* or *fire exit hardware*.

Exceptions:

1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordancewith Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be electromagneticallylocked in accordance with Section 1010.1.9.9.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with *exit* or *exit access doors*, shall be equipped with *panic hardware* or *fire exit hardware*. The doors shall swing in the direction of egress travel.

Reason: UL 305 is the standard by which panic and fire exit hardware is typically listed. UL 305 applies to outward-opening doors and as such does not apply to the special doors addressed in Section 1010.1.4. However, some have interpreted the current text in 1010.1.10 to require panic hardware or fire exit hardware on special doors, such as special purpose horizontal sliding, accordian or folding doors. The proposed text clarifies that panic and fire exit hardware is required for pivoted or side-hinged swinging doors.

Cost Impact: Will not increase the cost of construction The proposal clarifies existing code text.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: To limit the panic hardware to swinging doors is consistent with the referenced standards and application for panic hardware.

Assembly Action:

Non

e

Final Action Results

E77-15 **AS**

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F8123

Date Submitted	12/14/2018	**Section**	1015.8	**Proponent**	Ann Russo4
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

In Group F occupancies the top of the guard can be 34" to 38" and eliminates the 42" guard if the exit access stairways serve three stories or less and such stairs are not open to the public, and the top of the guard also serves as a handrail

Rationale

Federal OSHA requirements restrict industrial stairway guard to a maximum of 34"; it also intends that the top rail will be used as a handrail. FBC requires a guard at 42".This proposal attempts to find a reasonable middle ground making at least one solution to the FBC and OSHA requirements for non-egress stairways in factory settings. Gives factory workers the ability to work,carry tools in tight spaces they are familiar with , to maneuver less awkwardly. It is already used int the FBC Group R-3 and in individual dwelling units of
R-2.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

It will be a decrease in cost to building and property owners as current code requirements adds additional rail and cost.

Impact to industry relative to the cost of compliance with code

It will be a decrease in cost to industry as current code requirements adds additional rail and cost.

Impact to small business relative to the cost of compliance with code

It will be a decrease in cost to small business as current code requirements adds additional rail and cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by allowing workers to work more efficiently while still being safe in tight areas and does not effect the public

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by providing a better method of working with the FBC and OSHA rules

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit materials, products, methods, or systems of construction

Does not degrade the effectiveness of the code

It increases the effectiveness of the code by being a fair middle ground with OSHA requirements

1015.3 Height. Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread nosings.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the *guard*.

Exceptions:
1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces or adjacent *fixed seating*.
2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* also serves as a *handrail* on the open sides of stairs, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. The *guard* height in assembly seating areas shall comply with Section 1029.16 as applicable.
5. Along alternating tread devices and ships ladders, *guards* where the top rail also serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *noising*.
6. In Group F occupancies, where *exit access stairways* serve three stories or less and such stairs are not open to the public, where the top of the guard also serves as a handrail, the top of the guard shall be not less than 34 inches (864 mm) and not more than 38 inches (865 mm) measured vertically from a line connecting the leading edges of the treads.

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Date Submitted	12/14/2018	**Section**	1010.1.9.7	**Proponent**	Ann Russo4
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

IFC 1010.1.9.7

Summary of Modification

Permit the use of delayed egress system on door(s) other than the main entrance/exit door(s) from a courtroom.

Rationale

The intent of this code change proposal is to permit the use of delayed egress system on door(s) other than the main entrance/exit door(s) from a courtroom. According to Chapter 3 in the FBC, courtrooms are considered Assembly occupancies. Therefore, delayed egress locking systems would not be permitted to be installed on any doors from a courtroom. Courtrooms are located within courthouses which are a unique building type that is designed with three separate and distinct circulation systems – one for the public, one for the judiciary/secure staff, and one for in-custody inmates. Because each of these groups must be kept separate for security reasons, it is necessary to lock the doors where these groups interface to prevent intermixing. A standard courtroom design provides free egress for the public from the main entrance/exit door(s) (the same entrance the public entered the courtroom) to the public circulation area. The door serving the detainee area (prisoner interface) is locked and fail secure, which is permitted by code. As stated above, since the courtrooms are considered an "assembly occupancy" and have an occupant load of 50 or more persons they require a second means of egress.

Industry practice has been to utilize the exit(s) in the front of the courtroom as the secondary means of egress. These egress door(s) also serve as the entrance/egress for the judge and court staff. (Please refer to diagram). To maintain the security separation of occupants, it is industry practice to equip these second means of egress door(s) with a delayed egress locking system which prevents any unauthorized person from gaining access to the secure corridor areas.

A courtroom, unlike many other assembly occupancies, is a controlled environment. A bailiff is located within the courtroom when occupied by the public and/or prisoners. The bailiff, along with other court personnel, is equipped with a security access card that can override the delay.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

local entity has additional inspection and plan review options of safety devices

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners . It will not increase the cost of construction. It is common to see these devices used within courthouses. Allowing this will not increase the cost of construction

Impact to industry relative to the cost of compliance with code

No impact to industry . It will not increase the cost of construction. It is common to see these devices used within courthouses. Allowing this will not increase the cost of construction

Impact to small business relative to the cost of compliance with code

No impact to small business. It will not increase the cost of construction. It is common to see these devices used within courthouses. Allowing this will not increase the cost of construction

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by allowing secondary egress doors to have delayed egress options.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code providing a better methods and/or systems of construction by allowing secondary egress doors to have delayed egress options.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit materials, products, methods, or systems of construction

Does not degrade the effectiveness of the code

Increases the effectiveness of the code by providing a better methods and/or systems of construction

Revise as follows:

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving any occupancy except Group A, E and H in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907.

Exception: Delayed egress locking systems shall be permitted to be installed on exit or exit access doors, other than the main exit or exit access door, that serve a courtroom in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

1010.1.9.7.1 Delayed egress locking system.The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the f*ire command center* and other *approved* locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

   Exception: In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:
   For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
   For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30]SECONDS.
   The sign shall comply with the visual character requirements in ICC A117.1.

   Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.
7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system, units shall be listed in accordance with UL 294.

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F8134

Date Submitted	12/14/2018	**Section**	1010.1.4.4	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Propose requirements for locking of doors to classrooms, offices, and other occupied rooms in Group E and Group B educational occupancies.

Rationale

This proposal submits for the FBC the same language approved for the 2018 IBC. The final language approved for the 2018 IBC modified the original BHMA proposal per a joint public comment by the ICC Building Code Action Committee (BCAC) and the International Association of Fire Chiefs, Fire & Life Safety Section.

The proposal permits these doors to be locked, which is consistent with decades of past practice, and requires compliance with current requirements of the code.

Item 1, which is new, requires these doors to be unlockable from outside the room. This new requirement is important to ensure authorized personnel have ready access into these rooms.

The last sentence in this proposal permits remote operation of locks – remote locking may be highly desirable in new or renovated schools – while requiring the door locks to provide the same functionality of locks without remote locking capability.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Provides guidance where door locks are installed in classrooms, offices, and occupied rooms of K-12 schools and colleges / universities.

Impact to building and property owners relative to cost of compliance with code

Proposed requirements are consistent with vast majority of door locking systems being installed in new schools for the last decade or so. Thus, minimal to no cost of compliance (for new construction).

Impact to industry relative to the cost of compliance with code

Proposed requirements are consistent with vast majority of door locking systems being installed in new schools for the last decade or so. Thus, minimal to no cost of compliance (for new construction).

Impact to small business relative to the cost of compliance with code

Proposed requirements are consistent with vast majority of door locking systems being installed in new schools for the last decade or so. Thus, minimal to no cost of compliance (for new construction).

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes. Very important to require door locks, where installed in schools, to comply with requirements of the code AND to be unlockable from outside the room by authorized personnel; who may need immediate access (ingress) into a room to address whatever emergency situation may be unfolding within.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, provides appropriate guidance and requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code by addressing this very important need.

Insert text as shown:

1010.1.4.4 Locking arrangements in educational occupancies. In Group E and Group B educational occupancies, egress doors from classrooms, offices and other occupied rooms shall be permitted to be provided with locking arrangements designed to keep intruders from entering the room where all of the following conditions are met:

1. The door shall be capable of being unlocked from outside the room with a key or other approved means.

2. The door shall be openable from within the room in accordance with Section 1010.1.9.

3. Modifcations shall not be made to listed panic hardware, fire door hardware or door closer.

1010.1.4.4.1 Remote operation of locks. Remote operation of locks complying with Section 1010.1.4.4 shall be permitted.

Renumber these sections as shown:

1010.1.4.45 Security grilles. <no revisions to text>

1010.1.4.56 Protection devices for emergency escape and rescue openings. <no revisions to text>

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F8136

Date Submitted	12/14/2018	**Section**	1010.1.9.3	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Add a section to FBC in the special locking arrangements area to address “monitored egress”. Monitored egress is where a device such as a card reader, keypad, iris scan, finger scan, etc., is used to monitor who is egressing.

Rationale

Monitored or recorded egress is where an active device requiring credentials is used to monitor and / or record who is egressing. The active device could be a card reader, keypad, iris scan, finger scan, etc. A monitored egress device could be utilized on any of the “special locking arrangements” of Sections 1010.1.9.6 (Controlled egress), 1010.1.9.7 (Delayed egress), 1010.1.9.8 (Sensor release of electrically locked doors), 1010.1.9.9 (Electromagnetically locked egress doors), 1010.1.9.10 (Locking arrangements in correctional facilities) provided the functions of that specific locking arrangement are retained and maintained. Examples: a keypad could be installed next to an electromagnetically locked egress door; a card reader could be installed next to a delayed egress door; or a keypad installed in the approach area of a sensor release door. The special locking arrangement would need to fully comply with its requirements.

This proposal provides guidance and requirements for locking systems and locking arrangements installed today. For example, some hospitals in the newborn nursery area installed delayed egress locking systems (complying with FBC 1010.1.9.7). Many of these locking systems allow hospital staff to swipe their magnetic name badge to eliminate the delay of the delayed egress system while also disabling any alarm system, and at the same time recording (monitoring) which badge was swiped. The proposal recognizes systems such as this, and provides appropriate requirements.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Provides guidance and requirements for locking systems and locking arrangements installed today.

Impact to building and property owners relative to cost of compliance with code

These are "shall be permitted" locking systems. As such, there should be no required cost of code compliance. IF these locking systems are installed, the proposed requirements help assure current code requirements are complied with, which should not increase cost.

Impact to industry relative to the cost of compliance with code

These are "shall be permitted" locking systems. As such, there should be no required cost of code compliance. IF these locking systems are installed, the proposed requirements help assure current code requirements are complied with, which should not increase cost.

Impact to small business relative to the cost of compliance with code

These are "shall be permitted" locking systems. As such, there should be no required cost of code compliance. IF these locking systems are installed, the proposed requirements help assure current code requirements are complied with, which should not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal helps ensure egress is provided consistent with current requirements of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Insert text as follows:

1010.1.9 Door operations. Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1010.1.9.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be *accessible* by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

1010.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also selflocking devices operated by means of a key, electronic opener or integral combination lock.

1010.1.9.3 Monitored or recorded egress. Where electrical systems which monitor or record egress activity are incorporated, the locking system shall comply with Sections 1010.1.9.6, 1010.1.9.7, 1010.1.9.8, 1010.1.9.9, or 1010.1.9.10 or shall be readily openable from the egress side without the use of a key or special knowledge or effort.

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F8138

Date Submitted	12/14/2018	**Section**	1010.1.9.3	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to allow doors to roofs not intended to be occupied to be locked preventing access into the building from the roof, especially for security reasons

Rationale

Questions are being asked of BHMA members as to what is allowed and / or required for locking of doors to roofs not intended to be occupied. This proposal attempts to address these questions.

The intent of this proposal is to allow doors to roofs not intended to be occupied to be locked preventing access into the building from the roof, especially for security reasons.

This proposal does not address locking of doors preventing access to the roof. Also, egress from occupied roofs is addressed in Section 1006.3.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Proposal addresses an unanswered question. Should help with code enforcement.

Impact to building and property owners relative to cost of compliance with code

Should be no required cost of compliance as the provision is "shall be permitted".

Impact to industry relative to the cost of compliance with code

Should be no required cost of compliance as the provision is "shall be permitted".

Impact to small business relative to the cost of compliance with code

Should be no required cost of compliance as the provision is "shall be permitted".

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

May be important to some building owners to prevent unauthorized access into their building from a roof, where that roof is not intended to be occupied.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by addressing this unanswered question.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves effectiveness of the code.

Revise as follows:

1010.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.

2. In buildings in occupancy Group A having an *occupant load* of 300 or less, Groups B, F, M and S, and in *places of religious worship*, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

load of 300 or less, Groups B, F, M and S, and in *places of religious worship*, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1. The locking device is readily distinguishable as locked.

2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.

2.3. The use of the key-operated locking device is revokable by the *building official* for due cause.

3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.

4. Doors from individual *dwelling* or *sleeping units* of Group R occupancies having an *occupant load* of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

5. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in accordance with *listed fire door* test procedures.

6. Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof.

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F8202

Date Submitted	12/14/2018	**Section**	1023.4	**Proponent**	Ann Russo4
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

IFC1023.4

Summary of Modification

Replaces non-mandatory language with mandatory language "required" instead of necessary

Rationale

Replace non-mandatory language with mandatory language

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Increases strength through improved regulatory language.

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

No impact to industry as this is will not increase the cost of construction

Impact to small business relative to the cost of compliance with code

No impact to small buisiness as this is will not increase the cost of construction

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by being an editorial clean up. It replaces non-mandatory language with mandatory language

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code. This is an editorial clean up. It replaces non-mandatory language with mandatory language

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against material, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit material, products, methods, or systems of construction

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code This is an editorial clean up. It replaces non-mandatory language with mandatory language.

Revise as follows:

1023.4 Openings. *Interior exit stairway* and *ramp* opening protectives shall be in accordance with the requirements of Section 716.

Openings in *interior exit stairways* and *ramps* other than unprotected exterior openings shall be limited to those ~~necessary~~ required for *exit access* to the enclosure from normally occupied spaces and for egress from the enclosure.

Elevators shall not open into *interior exit stairways* and *ramps*.

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F8203

Date Submitted	12/14/2018	**Section**	1010.1.9.7	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

One proposal which incorporates proposed revisions to this section re: delayed egress locking systems approved for the 2018 IBC in proposals E66-15, E68-15, & E69-15.

Rationale

This proposal combines approved revisions to the 2018 IBC by proposals E66-15, E68-15, and E69-15.
Both E66-15 and E68-15 were approved “As Modified by Public Comment 1” during the Public Comment Hearing and received final approval by the Online Governmental Consensus Vote following the Public Comment Hearing. Proposal E69-15 was approved “As Submitted” by the ICC Means of Egress Code Committee and received final approval via the consent agenda during the Public Comment Hearing.
E66-15 allows delayed egress locking systems in courtrooms subject to specific limitations and requirements.
E68-15 allows delayed egress locking systems in Group E classrooms with an occupant load of less than 50.
E66-15 allows not more than two delayed egress locking systems in Group I-1 and I-4 occupancies.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Adds occupancies and several exceptions where delayed egress locking systems are permitted (and desired) to be installed. Additional installations would increase the number of installations where compliance should be evaluated by the code official.

Impact to building and property owners relative to cost of compliance with code

Delayed egress locking systems are "shall be permitted" locking systems. As such, there would be no required increase in code compliance. This proposal provides for additional delayed egress locking systems which is desirable by building owners.

Impact to industry relative to the cost of compliance with code

Delayed egress locking systems are "shall be permitted" locking systems. As such, there would be no required increase in code compliance. This proposal provides for additional delayed egress locking systems which is desirable by building owners.

Impact to small business relative to the cost of compliance with code

Delayed egress locking systems are "shall be permitted" locking systems. As such, there would be no required increase in code compliance. This proposal provides for additional delayed egress locking systems which is desirable by building owners.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Provides explicit and appropriate code requirements for delayed egress locking systems to help ensure egress is available at all times.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code and brings code up to date with these locking systems.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

1010.1.9.~~7~~8 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving ~~any occupancy except Group A, E and H~~ the following occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907.

1. Group B, F, I, M, R, S and U occupancies.

2. Group E classrooms with an occupant load of less than 50.

Exception: Delayed egress locking systems shall be permitted to be installed on *exit* or *exit access* doors, other than the main *exit* or *exit access* door, serving a courtroom in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

1010.1.9.8.1 Delayed egress locking system. The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate~~,~~ free egress.

2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.

3. The delayed egress locking system shall have the capability of being deactivated at the *fire command center* and other *approved* locations.

4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

~~**Exception:**~~**Exceptions:**

1. In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided that the combined delay does not exceed 30 seconds.

2. In Group I-1 or I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:

6.1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.3. The sign shall comply with the visual character requirements in ICC A117.1.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.

8. The delayed egress locking system units shall be *listed* in accordance with UL 294.

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2020 FBC Proposal Based on 2018 IBC Proposals E66-15, E68-15, & E69-15

1010.1.9.~~7~~8 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving ~~any occupancy except Group A, E and H~~the following occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907. ~~The~~

1. Group B, F, I, M, R, S and U occupancies.

2. Group E classrooms with an occupant load of less than 50.

Exception: Delayed egress locking systems shall be permitted to be installed on *exit* or *exit access* doors, other than the main *exit* or *exit access* door, serving a courtroom in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

1010.1.9.8.1 Delayed egress locking system. The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate~~,~~ free egress.

2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.

3. The delayed egress locking system shall have the capability of being deactivated at the *fire command center* and other *approved* locations.

4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

~~Exception:~~Exceptions:

1. In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided that the combined delay does not exceed 30 seconds.

2. In Group I-1 or I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:

6.1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.3. The sign shall comply with the visual character requirements in ICC A117.1.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.

8. The delayed egress locking system units shall be *listed* in accordance with UL 294.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8203_Rationale_2020 FBC Proposal E66-15, E68-15, and E69-15 Delayed

This proposal combines approved revisions to the 2018 IBC by proposals E66-15, E68-15, and E69-15.

Both E66-15 and E68-15 were approved "As Modified by Public Comment 1" during the Public Comment Hearing and received final approval by the Online Governmental Consensus Vote following the Public Comment Hearing. Proposal E69-15 was approved "As Submitted" by the ICC Means of Egress Code Committee and received final approval via the consent agenda during the Public Comment Hearing.

E66-15 info and reasons:

Proponent (original proposal): James Peterkin (jpeterki@heery.com)

Proponent (public comment 1): Dave Frable, representing US General Services Administration; James Peterkin, representing self (jpeterki@heery.com)

Commenter's Reason (from Public Comment 1, minimal edits): The intent of this code change proposal is to permit the use of delayed egress system on door(s) other than the main entrance/exit door(s) from a courtroom. According to Chapter 3 in the IBC, courtrooms are considered Assembly occupancies. Therefore, delayed egress locking systems would not be permitted to be installed on any doors from a courtroom. However, courtrooms are located within courthouses which are a unique building type that is designed with three separate and distinct circulation systems – one for the public, one for the judiciary/secure staff, and one for in-custody inmates. The three circulation systems are segregated and they only meet in a single location, the courtrooms. The public enter the courtroom from the public corridor, the judges and court staff enter from the secure corridor and the prisoners enter from the secure detainee area that is typically adjacent to the courtroom. Because each of these groups must be kept separate for security reasons, it is necessary to lock the doors where these groups interface to prevent intermixing.

A standard courtroom design provides free egress for the public from the main entrance/exit door(s) (the same entrance the public entered the courtroom) to the public circulation area. The door serving the detainee area (prisoner interface) is locked and fail secure, which is permitted by code. As stated above, since the courtrooms are considered an "assembly occupancy" and have an occupant load of 50 or more persons they require a second means of egress. Industry practice has been to utilize the exit(s) in the front of the courtroom as the secondary means of egress. These egress door(s) also serve as the entrance/egress for the judge and court staff. To maintain the security separation of occupants, it is industry practice to equip these second means of egress door(s) with a delayed egress locking system which prevents any unauthorized person from gaining access to the secure corridor areas. A courtroom, unlike many other assembly occupancies, is a controlled environment.

A bailiff is located within the courtroom when occupied by the public and/or prisoners. The bailiff, along with other court personnel, is equipped with a security access card that can override the delay. Permitting the use of a delayed egress system on door(s) other than the main entrance/exit door(s) from a courtroom will not adversely impact occupant safety and has been permitted and recognized by the National Fire Protection Association, Life Safety Code, for several code cycles. In addition, the U.S. General Services Administration also permits the use of delayed egress systems on door(s) other than the main entrance/exit door(s) from a courtroom.

E68-15 info and reasons:

Proponent (original proposal): Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Reason (original proposal):This proposal is in response to several requests to address the needs of small educational occupancies to help prevent wandering / elopement, especially for the very young, and for special needs students. This public proposal is submitted by the ICC Building Code Action Committee (BCAC).

Proponent (public comment 1): Jonathan Siu, City of Seattle Department of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8203_Rationale_2020 FBC Proposal E66-15, E68-15, and E69-15 Delayed

Reason (public comment 1): This limits the use of delayed egress devices in E occupancies to classrooms with an occupant load less than 50, as opposed to assembly spaces in E occupancies. The code says that assembly areas in schools get classified as E occupancies (Section 303.1.3). This means that multi-purpose rooms, auditoriums, gymnasiums, and similar spaces associated with a school are E occupancies.
This code change proposal, as modified by the committee, allows delayed egress hardware on every door in an E occupancy, which would include these assembly-type spaces. However, the committee reason statement only talks about classrooms, where there are fewer occupants. We agree it would be appropriate to allow delayed egress hardware on classroom doors, but we do not think it is appropriate to have delayed egress hardware in assembly areas. The proposed change (as modified by the committee) also conflicts with the requirements in Section 1010.1.10 for panic hardware.
The modification proposed in this public comment would take care of both issues by limiting the delayed egress hardware to classroom doors (as appears to have been the intent of the proponents of the original code change), but adds an additional limitation that the classrooms with this hardware must also have an occupant load of less than 50, in order to eliminate the conflict with the panic hardware requirements.
The editorial modification to move the list of occupancies from the main paragraph to a bullet list was necessitated when the E occupancies were separated from the list, in order to eliminate any confusion over whether the sprinklers and alarm systems are required for all the listed occupancies.

E69-15 info, reasons, and committee action:

Proponent (original proposal): Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Reason: In Item 5, the new exception is proposed to be revised to include Group I-1 occupancies to allow up to two delayed egress systems. As in Group I-2, Group I-1 occupancies may need more than one delayed egress system. For example, if the Group I-1 occupancy is on the 2nd floor, or higher, in a building, a delayed egress system may be needed on the door to the exit stairway on that floor. And a second delayed egress locking system may be needed at the door to the exterior on the ground floor. In Group I-1 and I-4 an additional delayed egress locking system may be highly desirable to help reduce wandering or elopement by occupants.

Committee Action: Approved as Submitted

Committee Reason: The addition of Group I-1 and I-4 to the Exceptions in Item 5 provides for consistency in all Group I occupancies where there are concerns for wandering. With the total time limit staying at 30 seconds maximum, security concerns can be addressed without an increase in the level of risk for residents.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8203_Rationale_2020 FBC Proposal E66-15, E68-15, and E69-15 Delayed

F8206

Date Submitted	12/14/2018	**Section**	1023.11	**Proponent**	Ann Russo4
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

IFC 1023.11
1011

Summary of Modification

Adds Section 412.3.2 to smoke proof enclosures in correlation with air traffic control towers.

Rationale

Section 412.3.2 requires smokeproof enclosures for air traffic control tower stairs and refers to section 1023.11 but section 1023.11 does not reference back to 412.3.2 as it does for high-rise buildings (403.5.4) and underground buildings (405.7.2). This change is proposed to reduce potential confusion from the lack of the reference statement in 1023.11. The current code requirement from 412.3.2 is included below for reference.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is only reduces potential confusion and clarifies the intent of the code. No cost impact is associated with this change.

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

No impact to industry as this is will not increase the cost of construction

Impact to small business relative to the cost of compliance with code

No impact to small business as this is will not increase the cost of construction

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by adding a change that is proposed to reduce potential confusion from the lack of the reference statement in 1023.11

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by adding a change that is proposed to reduce potential confusion from the lack of the reference statement in 1023.11

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against material, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit material, products, methods, or systems of construction

Does not degrade the effectiveness of the code

Increases the effectiveness by adding a change that is proposed to reduce potential confusion from the lack of the reference statement in 1023.11

Revise as follows:

_1023.11 Smokeproof enclosures. Where required by Section 403.5.4 ~~or~~, 405.7.2, or 412.3.2, *interior exit stairways* and *ramps* shall be *smokeproof enclosures* in accordance with Section 909.20.

Stairways. Stairways in airport traffic control towers shall be in accordance with Section 1011. Stairways shall be smokeproof enclosures complying with one of the alternatives provided in Section909.20.

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F8208

Date Submitted	12/14/2018	**Section**	1010.1.9.8	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal combines approved revisions to the 2018 IBC by proposals E70-15 and E71-15. Both E70-15 and E71-15 were approved “As Submitted” by the ICC Means of Egress Code Committee, and received final approval via the consent agenda during the Public Comment Hearing.

Rationale

E70-15 info, reasons, and committee action:
Proponent (original proposal): John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA), (jwoestman@kellencompany.com)
Reason: This proposal revises the occupancy groups to allow this locking arrangement to be used in all occupancies except occupancy Group H. Code officials and specifiers have asked why this door locking option is allowed in only the currently listed occupancy groups. No reason is known other than the current allowed occupancies in Section 1010.1.9.8 are consistent with those in Section 1010.1.9.9, which a separate proposal revises.
E71-15 info, reasons, and committee action:
Proponent (original proposal): Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)
Reason: Update 1010.1.9.8 to improve clarity and consistency in the language. The charging language is proposed to eliminate redundancy in this section. With revisions to the first sentence, text late in that sentence is redundant as entrance doors to tenant spaces are commonly in the means of egress. It is uncommon that tenant doors are not in the means of egress.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal clarifies the requirements for these locking systems, which should help the code to be quicker and easier to interpret and enforce.

Impact to building and property owners relative to cost of compliance with code

These locking systems are "shall be permitted" and not required in buildings. As such, the revisions should result in no required cost increase in code compliance.

Impact to industry relative to the cost of compliance with code

These locking systems are "shall be permitted" and not required in buildings. As such, the revisions should result in no required cost increase in code compliance.

Impact to small business relative to the cost of compliance with code

These locking systems are "shall be permitted" and not required in buildings. As such, the revisions should result in no required cost increase in code compliance.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Proposal helps ensure these locking systems are installed and operate in a manner which facilitates immediate egress.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code by clarifying how these door locking systems are required to operate.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

1010.1.9.89 Sensor release of electrically locked egress doors.~~The~~ Sensor release of electric ~~locks~~locking systems shall be permitted on ~~sensor released~~ doors located in a~~the~~*means of egress* in ~~buildings with an~~any occupancy ~~in~~except ~~Group A, B, E, I-1, I-2, I-4, M, R-1 or R2 and entrance doors to tenant spaces in occupancies in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 are permitted~~ H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors~~. The doors~~, and shall cause the electric locking system to unlock.

2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.

~~2~~3. Loss of power to the lock or locking system shall automatically unlock the ~~doors~~electric locks.

~~3~~4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads “PUSH TO EXIT.” When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—independent of other electronics—and the ~~doors~~electric lock shall remain unlocked for not less than 30 seconds.

~~4~~5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the ~~doors~~electric lock, and the ~~doors~~electric lock shall remain unlocked until the fire alarm system has been reset.

~~5~~6. Activation of the building *automatic sprinkler system* or *fire detection system*, where provided, shall automatically unlock the ~~doors.~~electric lock. The ~~doors~~electric lock shall remain unlocked until the *fire alarm system* has been reset.

~~6~~7. The door locking system units shall be *listed* in accordance with UL 294.

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2020 FBC Proposal Based on 2018 IBC Proposals E70-15 & E71-15

1010.1.9.~~8~~9 Sensor release of electrically locked egress doors. ~~The~~ Sensor release of electric ~~locks~~locking systems shall be permitted on ~~sensor released~~ doors located in ~~a~~the *means of egress* in ~~buildings with an~~any occupancy ~~in~~except Group ~~A, B, E, I-1, I-2, I-4, M, R-1 or R2 and entrance doors to tenant spaces in occupancies in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 are permitted~~H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors~~. The doors~~, and shall cause the electric locking system to unlock.

2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.

~~2~~3. Loss of power to the lock or locking system shall automatically unlock the ~~doors~~electric locks.

~~3~~4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—independent of other electronics—and the ~~doors~~electric lock shall remain unlocked for not less than 30 seconds.

~~4~~5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the ~~doors~~electric lock, and the ~~doors~~electric lock shall remain unlocked until the fire alarm system has been reset.

~~5~~6. Activation of the building *automatic sprinkler system* or *fire detection system*, where provided, shall automatically unlock the ~~doors.~~electric lock. The ~~doors~~electric lock shall remain unlocked until the *fire alarm system* has been reset.

~~6~~7. The door locking system units shall be *listed* in accordance with UL 294.

This proposal combines approved revisions to the 2018 IBC by proposals E70-15 and E71-15.

Both E70-15 and E71-15 were approved "As Submitted" by the ICC Means of Egress Code Committee, and received final approval via the consent agenda during the Public Comment Hearing.

E70-15 info, reasons, and committee action:

Proponent (original proposal): John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA), (jwoestman@kellencompany.com)

Reason: This proposal revises the occupancy groups to allow this locking arrangement to be used in all occupancies except occupancy Group H. Code officials and specifiers have asked why this door locking option is allowed in only the currently listed occupancy groups. No reason is known other than the current allowed occupancies in Section 1010.1.9.8 are consistent with those in Section 1010.1.9.9, which a separate proposal revises. Just a reminder, this locking arrangement facilitates immediate egress by sensing the approaching occupant and unlocking the electric lock on the door. In many applications, the occupant is unaware the door is electrically locked as the electrical locks unlock prior to the occupant reaching the door.

Committee Action: Approved as Submitted

Committee Reason: There was not technical justification for not allowing groups that were not currently listed to use the sensor release locking systems when this system is permitted for occupancies with higher occupant loads.

E71-15 info, reasons, and committee action:

Proponent (original proposal): Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

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Reason: Update 1010.1.9.8 to improve clarity and consistency in the language. The charging language is proposed to eliminate redundancy in this section. With revisions to the first sentence, text late in that sentence is redundant as entrance doors to tenant spaces are commonly in the means of egress. It is uncommon that tenant doors are not in the means of egress.
The revisions to the numbered items is to clarify the required functions of the electric locking system. In Item 1, the added text describes what the sensor is required to do upon detecting an approaching occupant. The revisions in the other items clarify requirements for this electrical locking system.
This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments.

Committee Action: Approved as Submitted
Committee Reason: The proposal improves consistency of the terms used for this type of locking system.

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F8215

Date Submitted	12/14/2018	**Section**	1010.1.9.9	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Proposal for the 2020 FBC which incorporates revisions to the 2018 IBC from proposal E72-15.

Rationale

Proponent (original proposal): Building Code Action Committee
Reason (from original proposal): This "special locking arrangement" allows for immediate egress with one-handed operation of the door hardware. Code officials and specifiers have asked why this option is allowed in only the identified occupancies. No reason is known other than the current allowed occupancies in Section 1010.1.9.9 match those in Section 1010.1.9.8.
Further, revisions clarify this section of the code to address required functions of all types of electrical locking systems which are operated (i.e. unlocked) by operation of the door hardware such as panic hardware, fire exit hardware, or door knobs or levers (where panic or fire exit hardware is not required or not utilized). Electromagnetic locks are the most common type of electrical locks, but not the only type of electric locking hardware which may be selected by the designer, specifier, and / or building owner or occupant. Regardless of the type of electrical locking system, this section permits and requires the door hardware to be a device which causes the electrical lock to unlock immediately, allowing egress.

Cost Impact: Will not increase the cost of construction No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Revised description and clarified requirements for these door locking systems should make the code easier to interpret and enforce.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of code compliance. No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of code compliance. No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of code compliance. No cost impact unless the building owner chooses to install these shall be permitted locking systems.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal helps ensure these door locking system function to provide immediate egress.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code with less ambiguous requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

1010.1.9.910 ~~Electromagnetically~~Door hardware release of electrically locked egress doors. Doors hardware release of electric locking systems shall be permitted on doors in the means of egress in ~~buildings with an~~any occupancy except Group H ~~in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and~~ where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.

2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.1.9.6.

3. Operation of the door hardware directly interrupts the power to the electric~~electromagnetic~~ lock and unlocks the door immediately.

4. Loss of power to the electric locking system automatically unlocks the door.

5. Where panic or fire exit hardware is required by Section 1010.1.10, operation of the panic or fire exit hardware also releases the electric~~electromagnetic~~ lock.

6. The locking system units shall be listed in accordance with UL 294.

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F8219

Date Submitted	12/14/2018	**Section**	1010.1.10	**Proponent**	John Woestman
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

FBC proposal incorporating revisions approved for the 2018 IBC by proposals E77-15 and E78-15.

Rationale

E77-15 info and reasons
Proponent (original proposal): William Koffel, representing WonDoor
Commenter's Reason: UL 305 is the standard by which panic and fire exit hardware is typically listed. UL 305 applies to outward-opening doors and as such does not apply to the special doors addressed in Section 1010.1.4. However, some have interpreted the current text in 1010.1.10 to require panic hardware or fire exit hardware on special doors, such as special purpose horizontal sliding, accordian or folding doors. The proposed text clarifies that panic and fire exit hardware is required for pivoted or side-hinged swinging doors.
Cost Impact: Will not increase the cost of construction

E78-15 info and reasons
Proponent (original proposal: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA)
Commenter's reason: Revised 2nd exception allows doors in the means of egress of Group A or E occupancy with an occupant load of 50 or more to be equipped with doors complying with IBC Section 1010.1.9.8 Sensor release of electrically locked doors. These door locking systems permitted by 1010.1.9.8 are required to detect an occupant approaching the door and cause the electrical locking system to unlock the door, allowing egress. These locking arrangements facilitate immediate egress by sensing the approaching occupant and unlocking the electric lock on the door. In many applications, the occupant is unaware the door is electrically locked as the electrical locks unlock prior to the occupant reaching the door.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal clarifies requirements regarding panic and fire exit hardware which should make it easier to interpret and enforce the building code.

Impact to building and property owners relative to cost of compliance with code

There should be no increase in cost of compliance with the clarifications in this code proposal.

Impact to industry relative to the cost of compliance with code

There should be no increase in cost of compliance with the clarifications in this code proposal.

Impact to small business relative to the cost of compliance with code

There should be no increase in cost of compliance with the clarifications in this code proposal.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the code by improving text of requirements where panic or fire exit hardware is required.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code with improvements in understanding.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

1010.1.10 Panic and fire exit hardware. ~~Doors~~Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

Exceptions:

1. A main exit of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.

2. Doors provided with panic hardware or fire exit hardware serving a Group A or E occupancy shall be permitted to be ~~electromagnetically~~ electrically locked in accordance with Section 1010.1.9.8 or 1010.1.9.9.

3. Outdoor gates from residential and commercial swimming pools or swimming pool decks, except where the pool deck serves as a portion of the means of egress of a building or has an occupant load of 300 or greater.

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F8224

Date Submitted	12/14/2018	**Section**	1010.1.7	**Proponent**	Anthony Miller
Chapter	10	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language Yes

Related Modifications

Summary of Modification

Brings back door threshold requirements in the 5th Edition of the FBC (2014) that were inadvertently left out of the 6th Edition (2017) version.

Rationale

This language was provided in the 2014 FBC and was not brought into the 2017 version of the Code (inadvertently).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
Clarifies code requirements for water-rated doors.

Impact to building and property owners relative to cost of compliance with code
Does not impact cost of compliance with the code.

Impact to industry relative to the cost of compliance with code
Does not impact cost of compliance with the code.

Impact to small business relative to the cost of compliance with code
Does not impact cost of compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Does not adversely affect the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Improves the code by providing clarification for water-rated doors.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
Does not discriminate.

Does not degrade the effectiveness of the code
Does not degrade effectiveness.

Alternate Language

1st Comment Period History

8224-A1

Proponent Anthony Miller **Submitted** 2/15/2019 **Attachments** Yes

Rationale

This language was provided in the 2014 FBC and was not brought into the 2017 version of the Code (inadvertently).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
Clarifies code requirements for water-rated doors.

Impact to building and property owners relative to cost of compliance with code
Does not impact cost of compliance with the code.

Impact to industry relative to the cost of compliance with code
Does not impact cost of compliance with the code.

Impact to Small Business relative to the cost of compliance with code
Does not impact cost of compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Does not adversely affect the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Improves the code by providing clarification for water-rated doors.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
Does not discriminate.

Does not degrade the effectiveness of the code
Does not degrade effectiveness.

Mod 8224

1010.1.7 Thresholds.
Thresholds at doorways shall not exceed 3/4 inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or 1/2 inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exceptions:

1. In occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to 7-3/4 inches (197 mm) in height if all of the following apply:
   1.1. The door is not part of the required means of egress.
   1.2. The door is not part of an accessible route as required by Chapter 11.
2. For exterior doors serving dwelling units, thresholds at doorways shall not exceed the height required to pass the water resistance test of ANSI/AAMA/WDMA 101/I.S.2, or TAS 202 for high-velocity hurricane zones, or the maximum allowable height difference between interior floor levels. Exterior floor level shall comply with the following:

LEVEL DIFFERENCE (inches)	AT PRIMARY DOOR
0	Pervious construction (e.g., wood decking with spaces)
1/2	Impervious construction (e.g., concrete, brick or flag stone)
LEVEL DIFFERENCE (inches)	**AT SECONDARY DOOR**
1/2	Pervious construction
4	Impervious construction

Mod 8224-A1

1010.1.7 Thresholds.

Thresholds at doorways shall not exceed 3/4 inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or 1/2 inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exceptions:

1. In occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to 7-3/4 inches (197 mm) in height if all of the following apply:

1.1.The door is not part of the required means of egress.

1.2.The door is not part of an accessible route as required by Chapter 11.

2. For exterior doors serving dwelling units, thresholds at doorways shall not exceed the height required to pass the water resistance test of AAMA/WDMA/CSA 101/I.S.2/A440, or TAS 202 for high-velocity hurricane zones, or the maximum allowable height difference between interior floor levels. Exterior floor level shall comply with the following:

LEVEL DIFFERENCE (inches)	AT PRIMARY DOOR
0	Pervious construction (e.g., wood decking with spaces)
1/2	Impervious construction (e.g., concrete, brick or flag stone)
LEVEL DIFFERENCE (inches)	**AT SECONDARY DOOR**
1/2	Pervious construction
4	Impervious construction

F8309

Date Submitted	12/15/2018	**Section**	1010.1.1	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1010.1.1.1

Summary of Modification

The intent of a large portion of this change is consistent use of the terminology (e.g., minimum clear opening width/height) throughout this section. There is also the intent of putting the modifier first within the specific requirements (Group I-2, ambulatory care) and the exceptions.

Rationale

The intent of a large portion of this change is consistent use of the terminology (e.g., minimum clear opening width/height) throughout this section. There is also the intent of putting the modifier first within the specific requirements (Group I-2, ambulatory care) and the exceptions.

Exceptions 1, 2, 6 and 7 cannot be used in Accessible, Type A or Type B units; that would conflict with the Florida Accessibility Code for Building Construction, ICC A117.1, ADA and FHA. Also in Exception 7: dwelling units and sleeping units in Group I-2 and I-3 have specific criteria elsewhere in this section, and the ADA does not allow Group R-1 units to use this exception, therefore, the more specific limitation to allow this in Group I-1, R-2, R-3 and R-4.

Exception 8 is revised to be consistent with the language used for Type B dwelling units in ICC A117.1.

A code change added exception 10 as part of the coordination with ADA 224.1.2. Questions that has risen are: Is the intent to require 32" clear width shower stall doors in all showers Group I-1, R-2, R-3 and R-4 or multi-stall shower rooms? Is the intent to require 32" clear width shower doors in the 2nd bathrooms in Accessible units that are not required to have clearances? Elimination first part of the sentence would not change the allowances for accessible hotel rooms, and would eliminate the question.

Exception 11 is proposed to be added to address a similar question for doors on toilet stalls. The width of 32" is especially a problem with IPC since the stall is only required to be 30" wide.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no impact, as the proposed change is a clarification and coordination of current requirements.

Impact to building and property owners relative to cost of compliance with code

There will be no increase in cost.

Impact to industry relative to the cost of compliance with code

There will be no impact, as the proposed change is a clarification and coordination of current requirements.

Impact to small business relative to the cost of compliance with code

There will be no increase in cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This is a simple clarification, making it easier to understand.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This is a simple clarification, making it easier to understand.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This is a simple clarification, making it easier to understand.

Does not degrade the effectiveness of the code

This is a simple clarification, making it easier to understand.

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear opening width of 32 inches (813 mm). ~~Clear openings~~ The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41-1/ 2 inches (1054 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. ~~*Means of egress* doors in a Group I-2 occupancy used for the movement of beds shall provide a clear width not less than 41-1/ 2 inches (1054 mm).~~ The minimum clear height of door openings shall be ~~not less than~~ 80 inches (2032 mm).

Exceptions:

1. In Group R-2 and R-3 dwelling and sleeping units that are not required to be an Accessible unit, Type A unit or Type B unit, the ~~The~~ minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* ~~in Group R-2 and R-3 occupancies~~.
2. In Group I-3, door ~~Door~~ openings to resident *sleeping units* that are not required to be and Accessible units ~~in Group I-3 occupancies~~ shall have a minimum clear opening width of ~~not less than~~ 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum clear opening width.
4. Width of door leaves in revolving doors that comply with Section 1010.1.4.1 shall not be limited.
5. Door openings within a *dwelling unit* or *sleeping unit* shall ~~be not less than~~ have a minimum clear opening height of 78 inches (1981 mm) ~~in height~~.
6. In dwelling and sleeping units that are not required to be Accessible, Type A or Type B units, exterior ~~Exterior~~ door openings ~~in dwelling units and sleeping units,~~ other than the required *exit* door, shall ~~be not less than~~ have a minimum clear opening height of 76 inches (1930 mm) ~~in height~~.
7. ~~In other than Group R-1 occupancies~~ In Groups I-1, R-2, R-3 and R-4 occupancies, in dwelling and sleeping units that are not required to be Accessible, Type A or Type B units, the minimum clear opening widths shall not apply to interior egress doors ~~within a dwelling unit or sleeping unit that is not required to be an *Accessible unit*~~.
8. Buildings that are 400 square feet (37 m^2) or less and that are intended for use in conjunction with one- and two-family residences are not subject to the door height and width requirements of this code.
9. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m^2) in area shall have a maximum width of 60 inches (1524 mm) nominal.
10. ~~In Group R-1 *dwelling units* or *sleeping units* not required to be *Accessible units*, the~~ The minimum width shall not apply to doors for non-accessible showers or saunas compartments.
11. The minimum width shall not apply to the doors for non-accessible toilet seats.

1010.1.1.1 Projections into clear width. There shall not be projections into the required clear opening width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the floor.

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Date Submitted	12/15/2018	**Section**	1010.1.1	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments **No** **Alternate Language** **No**

Related Modifications

Summary of Modification

The proposed revisions are intended to improve clarity and consistency of the language of these sections of the code, and appear to be essentially editorial.

Rationale

The proposed revisions are intended to improve clarity and consistency of the language of these sections of the code, and appear to be essentially editorial. The maximum width of power-operated doors which comply with FBC Section 1010.1.4.2 should not be limited as these doors are either fully automatic or power-assisted, and must comply with all the requirements of Section 1010.1.4.2 including the safety requirements incorporated in the BHMA standards referenced in 1010.1.4.2. This revision addresses a potential conflict between the FBC and the relatively few power-operated swinging doors currently being installed which exceed 48" inches in width.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. Editorial change only.

Impact to building and property owners relative to cost of compliance with code

None. Editorial change only.

Impact to industry relative to the cost of compliance with code

None. Editorial change only.

Impact to small business relative to the cost of compliance with code

None. Editorial change only.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Editorial change only.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Helps to clarify the intent of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No. Editorial change only.

Does not degrade the effectiveness of the code

No. Editorial change only.

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear width of 32 inches (813 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. *Means of egress* doors in a Group I-2 occupancy used for the movement of beds shall provide a clear width not less than 41-1/ 2 inches (1054 mm). The height of door openings shall be not less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* in Group R-2 and R-3 occupancies.
2. Door openings to resident *sleeping units* in Group I-3 occupancies shall have a clear width of not less than 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum width.
4. ~~Width~~The width of door leaves in revolving doors that comply with Section 1010.1.4.1 shall not be limited.
5. The width of door leaves in bi-parting power-operated doors that comply with Section 1010.1.4.2 shall not be limited.
6. ~~5~~. Door openings within a *dwelling unit* or *sleeping unit* shall be not less than 78 inches (1981 mm) in height.
7. ~~6.~~ Exterior door openings in *dwelling units* and *sleeping units*, other than the required *exit* door, shall be not less than 76 inches (1930 mm) in height.

8. ~~7.~~ In other than Group R-1 occupancies, the minimum widths shall not apply to interior egress doors within a *dwelling unit* or *sleeping unit* that is not required to be an *Accessible unit*.
9. ~~8.~~ Buildings that are 400 square feet (37 m^2) or less and that are intended for use in conjunction with one- and two-family residences are not subject to the door height and width requirements of this code.
10. ~~9.~~ Doors to walk-in freezers and coolers less than 1,000 square feet (93 m2) in area shall have a maximum width of 60 inches (1524 mm).
11. ~~10.~~ In Group R-1 *dwelling units* or *sleeping units* not required to be *Accessible units*, the minimum width shall not apply to doors for showers or saunas.

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F8313

Date Submitted	12/15/2018	**Section**	1010.1.9.3	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The intent of this proposal is to allow doors to roofs not intended to be occupied to be locked. In an effort to prevent locking out an authorized person who goes to the roof from inside the building, this proposal includes a requirement for the door to not automatically lock behind this person.

Rationale

Questions are being asked of BHMA members as to what is allowed and / or required for locking of doors to roofs not intended to be occupied. This proposal attempts to address these questions.
The intent of this proposal is to allow doors to roofs not intended to be occupied to be locked preventing access into the building from the roof, especially for security reasons. However, in an effort to prevent locking out an authorized person who goes to the roof from inside the building, this proposal includes a requirement for the door to not automatically lock behind this person.
This proposal does not address locking of doors preventing access to the roof. Also, egress from occupied roofs is addressed in Section 1006.3.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Minimal, relative only to the inspection of the locking mechanism.

Impact to building and property owners relative to cost of compliance with code

No costs unless doors providing access to the roof are desired to be locked. If these doors are to be locked, this proposal provides guidance for selecting locking hardware.

Impact to industry relative to the cost of compliance with code

No costs unless doors providing access to the roof are desired to be locked. If these doors are to be locked, this proposal provides guidance for selecting locking hardware.

Impact to small business relative to the cost of compliance with code

No costs unless doors providing access to the roof are desired to be locked. If these doors are to be locked, this proposal provides guidance for selecting locking hardware.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Prevents occupants from being inadvertently trapped on a roof.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Prevents occupants from being inadvertently trapped on a roof.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no effect.

Does not degrade the effectiveness of the code

Strengthens the code by requiring a safer locking system for egress from roofs.

1010.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an *occupant load* of 300 or less, Groups B, F, M and S, and in *places of religious worship*, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
2.1. The locking device is readily distinguishable as locked.
2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.
2.3. The use of the key-operated locking device is revokable by the *building official* for due cause.
3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.
4. Doors from individual *dwelling* or *sleeping units* of Group R occupancies having an *occupant load* of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.
5. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in accordance with *listed fire door test* procedures.
6. Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof provided that when accessing the roof from the building the locks do not automatically lock preventing re-entry into the building from the roof.

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F8314

Date Submitted	12/15/2018	**Section**	1010.1.9.5.1	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Eliminates an inconsistent requirement.

Rationale

This is proposed to be deleted because it is an inconsistent requirement. If there is a concern that a person receiving custodial care might lock themselves in a bathroom or closet, this should be required in Group I-1, not just Group R-4. Also, this should not be an overall minimum code requirement, but more an option for a facility to provide where needed. Literally this would applied to storage closets that are not used by residents and closets that you would not walk into at all.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no impact.

Impact to building and property owners relative to cost of compliance with code

There will be no impact.

Impact to industry relative to the cost of compliance with code

There will be no impact.

Impact to small business relative to the cost of compliance with code

There will be no impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Does not affect the safety of the public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposal eliminates an inconsistent requirement.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no effect.

Does not degrade the effectiveness of the code

Has no effect.

~~**1010.1.9.5.1** Closet and bathroom doors in Group R-4 occupancies. In Group R-4 occupancies, closet doors that latch in the closed position shall be openable from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.~~

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F8315

Date Submitted	12/15/2018	**Section**	1010.1.9.7	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal is in response to several requests to address the needs of small educational occupancies to help prevent wandering / elopement, especially for the very young, and for special needs students.

Rationale

This proposal is in response to several requests to address the needs of small educational occupancies to help prevent wandering / elopement, especially for the very young, and for special needs students.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not affect the ability to enforce the code.

Impact to building and property owners relative to cost of compliance with code

No cost impact unless the building owner chooses to install a delayed egress locking system.

Impact to industry relative to the cost of compliance with code

No cost impact unless the building owner chooses to install a delayed egress locking system.

Impact to small business relative to the cost of compliance with code

No cost impact unless the building owner chooses to install a delayed egress locking system.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Allows small education occupancies to more effectively maintain the safety of its occupants.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Allows small education occupancies to more effectively maintain the safety of its occupants.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no effect on materials or methods.

Does not degrade the effectiveness of the code

Allows small education occupancies to more effectively maintain the safety of its occupants.

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving ~~any occupancy except Group A, E and H~~ Groups B, F, I, M, R, S and U occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907.

Exception:Delayed egress locking systems shall be permitted to be installed on doors serving Group E occupancies that have an *occupant load* of 10 or fewer and that are in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke or heat detection system* installed in accordance with Section 907.

1010.1.9.7.1 Delayed egress locking system. The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the automatic sprinkler system or automatic fire detection system, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the fire command center and other approved locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

Exception: In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:

6.1 For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 1530] SECONDS.

6.2 For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.3 The sign shall comply with the visual character requirements in ICC A117.1.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be listed in accordance with UL 294.

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F8317

Date Submitted	12/15/2018	**Section**	1010.1.9.7	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Provides a design option that would allow two delayed egress locking systems in the means of egress.

Rationale

In Item 5, the new exception is proposed to be revised to include Group I-1 occupancies to allow up to two delayed egress systems. As in Group I-2, Group I-1 occupancies may need more than one delayed egress system. For example, if the Group I-1 occupancy is on the 2nd floor, or higher, in a building, a delayed egress system may be needed on the door to the exit stairway on that floor. And a second delayed egress locking system may be needed at the door to the exterior on the ground floor. In Group I-1 and I-4 an additional delayed egress locking system may be highly desirable to help reduce wandering or elopement by occupants.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Little to no impact, as it provides a design option.

Impact to building and property owners relative to cost of compliance with code

Will increase the cost of construction.
This is a design option that would allow two delayed egress locking systems in the means of egress, which would increase costs, but it is not a requirement.

Impact to industry relative to the cost of compliance with code

Will increase the cost of construction.
This is a design option that would allow two delayed egress locking systems in the means of egress, which would increase costs, but it is not a requirement.

Impact to small business relative to the cost of compliance with code

Will increase the cost of construction.
This is a design option that would allow two delayed egress locking systems in the means of egress, which would increase costs, but it is not a requirement.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Provides a design option that can provide greater control over means of egress.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides a design option that can provide greater control over means of egress.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no affect on materials and methods.

Does not degrade the effectiveness of the code

Provides a design option that can provide greater control over means of egress.

1010.1.9.7 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving any occupancy except Group A, E and H in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke or heat detection system* installed in accordance with Section 907. The locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system or automatic fire detection system*, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the *fire command center* and other *approved* locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

~~**Exception**~~ **Exceptions:**

1.In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.

2.In Group I-1 or I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:

6.1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

6.3. The sign shall comply with the visual character requirements in the Florida Accessibility Code for Building Construction.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be listed in accordance with UL 294.

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F8318

Date Submitted	12/15/2018	**Section**	1010.1.9.8	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Update to improve clarity and consistency in the language. The language is proposed to eliminate redundancy in this section.

Rationale

Update 1010.1.9.8 to improve clarity and consistency in the language. The charging language is proposed to eliminate redundancy in this section. With revisions to the first sentence, text late in that sentence is redundant as entrance doors to tenant spaces are commonly in the means of egress. It is uncommon that tenant doors are not in the means of egress.
The revisions to the numbered items is to clarify the required functions of the electric locking system. In Item 1, the added text describes what the sensor is required to do upon detecting an approaching occupant. The revisions in the other items clarify requirements for this electrical locking system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. There are no technical revisions.

Impact to building and property owners relative to cost of compliance with code

No cost impact.

Impact to industry relative to the cost of compliance with code

No cost impact.

Impact to small business relative to the cost of compliance with code

No cost impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Helps to clarify code requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Helps to clarify requirements and eliminate redundancy.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no affect om materials or methods.

Does not degrade the effectiveness of the code

Helps to clarify requirements and eliminate redundancy.

1010.1.9.8 Sensor release of electrically locked egress doors. ~~The~~ Sensor release of electric ~~locks~~ locking systems shall be permitted on ~~sensor released~~ doors located in ~~a~~ the *means of egress* ~~in buildings~~ with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 ~~and entrance doors to tenant spaces in occupancies in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 are permitted~~ where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock.
2. The ~~doors~~ electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.
3. Loss of power to the lock or locking system shall automatically unlock the ~~doors~~ electric lock.
4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—independent of other electronics—and the ~~doors~~ electric lock shall remain unlocked for not less than 30 seconds.
5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the ~~doors~~ electric lock, and the ~~doors~~ electric lock shall remain unlocked until the fire alarm system has been reset.
6. Activation of the building *automatic sprinkler system or fire detection system*, where provided, shall automatically unlock the ~~doors~~ electric lock. The ~~doors~~ electric lock shall remain unlocked until the *fire alarm system* has been reset.
7. The door locking system units shall be listed in accordance with UL 294.

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F8319

Date Submitted	12/15/2018	**Section**	1010.1.9.9	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1010.1.10

Summary of Modification

Permits and requires the door hardware to be device which causes the electrical lock to unlock immediately, allowing egress.

Rationale

This "special locking arrangement" allows for immediate egress with one-handed operation of the door hardware. Code officials and specifiers have asked why this option is allowed in only these occupancies. No reason is known other than the current allowed occupancies in Section 1010.1.9.9 match those in Section 1010.1.9.8.
Further, revisions clarify this section of the code to address required functions of all types of electrical locking systems which are operated (i.e. unlocked) by operation of the door hardware such as panic hardware, fire exit hardware, or door knobs or levers (where panic or fire exit hardware is not required or not utilized). Electromagnetic locks are the most common type of electrical locks, but not the only type of electric locking hardware which may be selected by the designer, specifier, and / or building owner or occupant. Regardless of the type of electrical locking system, this section permits and requires the door hardware to be device which causes the electrical lock to unlock immediately, allowing egress.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no affect.

Impact to building and property owners relative to cost of compliance with code

No cost impact unless the building owner chooses to install these shall be permitted locking systems

Impact to industry relative to the cost of compliance with code

No cost impact unless the building owner chooses to install these shall be permitted locking systems

Impact to small business relative to the cost of compliance with code

No cost impact unless the building owner chooses to install these shall be permitted locking systems

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

A simple design option with no sacrifice to safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

A simple design option with no sacrifice to safety.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not affect materials or methods.

Does not degrade the effectiveness of the code

A simple design option with no sacrifice to safety.

1010.1.9.9 ~~Electromagnetically~~ Door hardware release of electrically locked egress doors. ~~Doors~~ Door hardware release of electric locking systems shall be permitted on doors in the *means of egress* with any occupancy except in Group H ~~in buildings with an occupancy in GroupA, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and~~ where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.1.9.5.
3. Operation of the door hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where *panic* or *fire exit hardware* is required by Section 1010.1.10, operation of the *panic* or *fire exit hardware* also releases the ~~electromagnetic~~ electric lock.
6. The locking system units shall be listed in accordance with UL 294.

1010.1.10 Panic and fire exit hardware. Doors serving a Group H occupancy and doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware or fire exit hardware*.

Exceptions:

1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be ~~electromagnetically~~ electronically locked in accordance with Section 1010.1.9.9.

3. Outdoor gates from residential and commercial swimming pool decks, except where the pool deck serves as a portion of the means of egress of a building or has an occupant load of 300 or greater.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with *exit* or *exit access* doors, shall be equipped with *panic hardware or fire exit hardware*. The doors shall swing in the direction of egress travel.

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F8323

Date Submitted	12/15/2018	**Section**	1010.1.9.10	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Eliminates the list of Groups in the section due to inconsistencies with how correctional facilities are defined in the code.

Rationale

Group I-1 services are provided in jails, however, they were not in this list of locking arrangements for correctional facilities. Rather than add Group I-1 to this growing list, it seems more appropriate to state that this type of locking should be allowed in all portions of a correctional facility. In addition, this list of Groups is inconsistent with how correctional facilities is defined in Section 308.5. If this system should not be allowed in certain types of jails, it should be regulated by the Condition, not a list of possible uses.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact. Clarification of requirements only.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies the code requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies the code requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

has no affect on materials or methods.

Does not degrade the effectiveness of the code

Clarifies the code requirements.

1010.1.9.10 Locking arrangements in <u>buildings within</u> correctional facilities. In occupancies in ~~Groups A-2, A-3, A-4, B, E, F, I-2, I-3, M and S~~ <u>buildings</u> within correctional and detention facilities, doors in *means of egress* serving rooms or spaces occupied by persons whose movements are controlled for security reasons shall be permitted to be locked where equipped with egress control devices that shall unlock manually and by not less than one of the following means:

1. Activation of an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. Activation of an *approved manual fire alarm box.*
3. A signal from a *constantly attended location.*

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Date Submitted	12/15/2018	**Section**	1010.1.9.11	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Allows for stair doors on the fifth and sixth stories to be locked from the non-egress side, consistent with doors on all other floors.

Rationale

As currently written, the code allows stairway doors to be locked from the side opposite egress on stories one through four in Exception 3 of Section 1010.1.9.11 and in high rise buildings (typically seven stories and higher) in Section 403.5.3. By deleting the limitation on the the number of stories in this section, stair doors on the fifth and sixth stories would be allowed to be locked from the non-egress side consistent with doors on all other floors.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no affect.

Impact to building and property owners relative to cost of compliance with code

There is no increase in cost of construction

Impact to industry relative to the cost of compliance with code

There is no increase in cost of construction

Impact to small business relative to the cost of compliance with code

There is no increase in cost of construction

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Allows for consistency along the means of egress, regardless of building height.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Allows for consistency along the means of egress, regardless of building height.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no affect on materials or methods.

Does not degrade the effectiveness of the code

Allows for consistency along the means of egress, regardless of building height.

1010.1.9.11 Stairway doors. Interior *stairway means of egress* doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. *Stairway* discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. ~~In stairways serving not more than four stories,~~*Stairway* exit doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the *fire command center*, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.
4. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single *exit stairway* where permitted in Section 1006.3.2.
5. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the *dwelling unit* is from a single *exit stairway* where permitted in Section 1006.3.2.

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F8330

Date Submitted	12/15/2018	**Section**	1010.1.10	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarifies text clarifying that panic and fire exit hardware is required for pivoted or side-hinged swinging doors, but not all door types.

Rationale

UL 305 is the standard by which panic and fire exit hardware is typically listed. UL 305 applies to outward-opening doors and as such does not apply to the special doors addressed in Section 1010.1.4. However, some have interpreted the current text in 1010.1.10 to require panic hardware or fire exit hardware on special doors, such as special purpose horizontal sliding, accordion or folding doors. The proposed text clarifies that panic and fire exit hardware is required for pivoted or side-hinged swinging doors.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no affect on enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Simply a clarification of existing code text.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Simply a clarification of existing code text.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Simply a clarification of existing code text.

Does not degrade the effectiveness of the code

Simply a clarification of existing code text.

1010.1.10 Panic and fire exit hardware. ~~Doors~~ Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware or fire exit hardware*.

Exceptions:
1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with Section 1010.1.9.9.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with *exit* or *exit access* doors, shall be equipped with *panic hardware or fire exit hardware.* The doors shall swing in the direction of egress travel.

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F8332

Date Submitted	12/15/2018	**Section**	1011.6	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Establishes a minimum length of a stair landing.

Rationale

The current code language does not establish a minimum depth/run for a landing due to the permissive language. This proposal will stipulate the minimum depth/run.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no effect.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
There could be a very slight increase in construction costs if the current language isn't interpreted as establishing a minimum landing depth/run.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
There could be a very slight increase in construction costs if the current language isn't interpreted as establishing a minimum landing depth/run.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
There could be a very slight increase in construction costs if the current language isn't interpreted as establishing a minimum landing depth/run.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Establishes minimum criteria that is currently up for interpretation.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Establishes minimum criteria that is currently up for interpretation.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Has no effect on materials or methods

Does not degrade the effectiveness of the code

Establishes minimum criteria that is currently up for interpretation.

1011.6 Stairway landings. There shall be a floor or landing at the top and bottom of each *stairway*. The width of landings shall be not less than the width of *stairways* served. Every landing shall have a minimum width measured perpendicular to the direction of travel equal to the width of the *stairway*. Where the *stairway* has a straight run the depth ~~need not exceed~~ shall be a minimum of 48 inches (1219 mm). Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (178 mm) into a landing. Where *wheelchair spaces* are required on the *stairway* landing in accordance with Section 1009.6.3, the *wheelchair space* shall not be located in the required width of the landing and doors shall not swing over the *wheelchair spaces*.

Exception: Where *stairways* connect stepped *aisles* to cross *aisles* or concourses, *stairway* landings are not required at the transition between *stairways* and stepped *aisles* constructed in accordance with Section 1029.

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F8333

Date Submitted	12/15/2018	**Section**	1011.10	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Modifies tread measurement for spiral stairs, as the method is outdated.

Rationale

This measurement method for standard and winder treads and the 7½ inch tread depth for spiral stairs predates the FBC. Since that time the method of measuring spiral stair tread depth has changed with the definition of winder. Spiral treads are winder treads as defined in the code.
Winder. A tread with nonparallel edges
Winder tread depth is measured "...between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline...". The change in the method of measurement results in a smaller dimension, for the same tread, that is ¾ inch smaller in depth as illustrated in figure 1. The figure also illustrates the elements of spiral stair tread geometry. If the code is not changed, each tread in the typical spiral stairway would need to be increased by ¾ inch from the longstanding accepted practice. The proposed dimension change preserves what has been the industry standard for the manufacture of spiral stairways since the legacy codes.
Not approving this proposal will result in undue costs for the limited number of stairs that will comply with code when the riser height can be maximized. Please keep in mind that no substantiation was presented of the need for increased tread depth in spiral stairways. In fact spiral stairs actually have deeper treads than most stairs, adjacent to the handrail on the outside where the user walks. The currently required, additional ¾ inches of tread depth increase, inadvertently approved in the last cycle, and changed in the long accepted standard for a typical 360 degree stairway will add more than one and one third treads to to each 13 tread stairway rotation. This will increasing the rotation by more than 36 degrees or 10% making it impossible in most situations to achieve the required headroom of 78 inches. Unchanged the FBC will all but eliminate spiral stairways.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to plan review or inspections.

Impact to building and property owners relative to cost of compliance with code

Will reduce the cost of construction by not eliminating space saving spiral stairs from most applications where the intent of the code is to allow their use. Space saved = $ saved.

Impact to industry relative to the cost of compliance with code

Will reduce the cost of construction by not eliminating space saving spiral stairs from most applications where the intent of the code is to allow their use. Space saved = $ saved.

Impact to small business relative to the cost of compliance with code

Will reduce the cost of construction by not eliminating space saving spiral stairs from most applications where the intent of the code is to allow their use. Space saved = $ saved.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will allow for more usable space in a building.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Does not degrade the code requirements, but clarifies a key difference in winder treads and spiral stairs.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Allows the use of space saving manufactured spiral stairs.

Does not degrade the effectiveness of the code

Does not degrade the code requirements, but clarifies a key difference in winder treads and spiral stairs.

1011.10 Spiral stairways. *Spiral stairways* are permitted to be used as a component in the *means of egress* only within *dwelling units* or from a space not more than 250 square feet (23 m2) in area and serving not more than five occupants, or from *technical production areas* in accordance with Section 410.6.

A *spiral stairway* shall have a ~~7-1/2~~ 6-3/4 inch (~~191~~171 mm) minimum clear tread depth at a point 12 inches (305 mm) from the ~~narrow edge~~ walkline. The risers shall be sufficient to provide a headroom of 78 inches (1981 mm) minimum, but riser height shall not be more than 9-1/2 inches (241 mm). The minimum *stairway* clear width at and below the handrail shall be 26 inches (660 mm).

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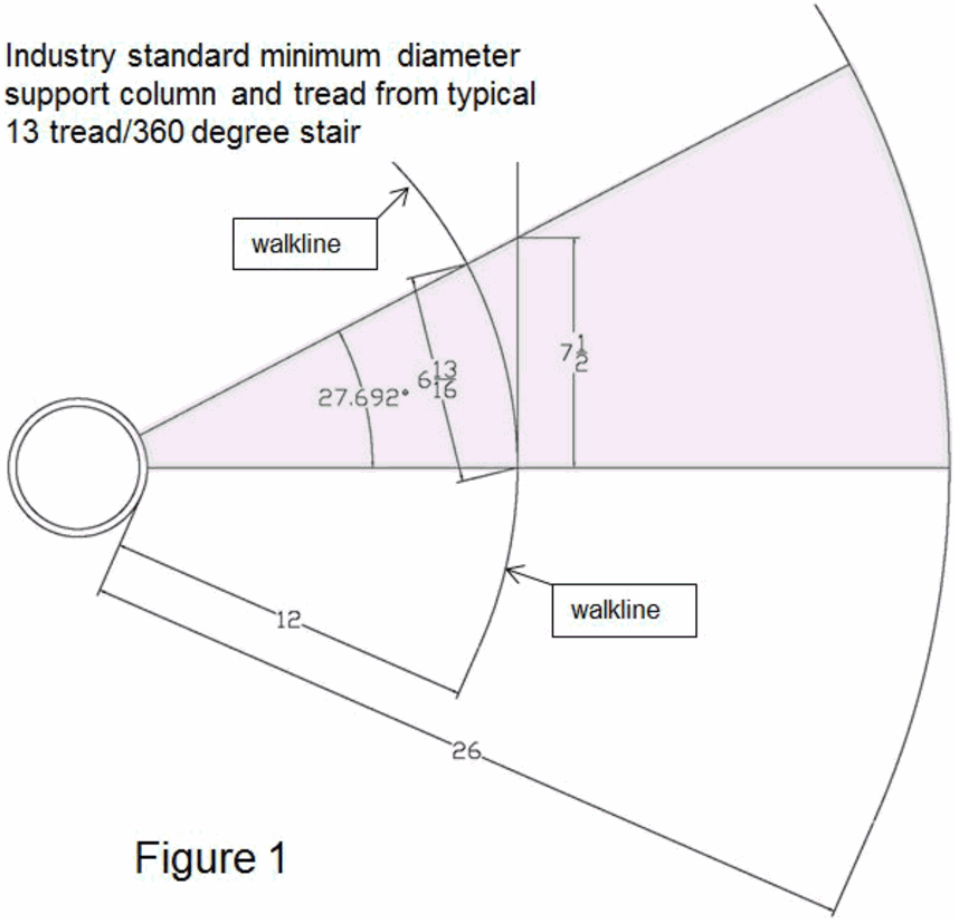

Figure 1

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8333_Rationale_fig 1_1.png

F8337

Date Submitted	12/15/2018	**Section**	1011.11	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1014.1

Summary of Modification

Clarifies that handrails, other than extensions, are not required at the periphery of stair landings.

Rationale

Other than required handrail extensions, handrails are not required at the outside periphery of landings. However long before we get to 1014.6 Handrail extensions, the use of the defined term "stairways" in sections 1011.11 and 1014.1, supports the interpretation that handrails are required at landings because by definition a stairway includes landings.
Stairway. One or more flights of stairs, either exterior or interior, with the necessary landings and platforms connecting therm, to form a continuous and uninterrupted passage from one level to another.
The problem becomes more apparent when we look at 1014.4 Continuity. Unlike continuity in the IRC there is no limit related to the flight. Confusion is created when 1014.4 is considered with the other handrail section references to stairways as revised in the proposal above. This is a particular problem when considering residential applications.
This proposal provides a simple solution by substituting the correct term "flights of stairways" for "stairways" and clarifies the intent of the code. The term flights of stairways is used throughout the code and in particular within 1014.6 Handrail extensions.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no effect. Simply a clarification.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

A simple clarification of handrail requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

A simple clarification of handrail requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

A simple clarification of handrail requirements.

Does not degrade the effectiveness of the code

A simple clarification of handrail requirements.

1011.11 Handrails. ~~*Stairways*~~ *Flights of stairways* shall have *handrails* on each side and shall comply with Section 1014. Where glass is used to provide the *handrail*, the *handrail* shall comply with Section 2407.

Exceptions:

1. ~~*Stairways*~~ *Flights of stairways* within *dwelling units* and flights of *spiral stairways* are permitted to have a *handrail* on one side only.
2. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require *handrails*.
3. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require *handrails*.
4. Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require *handrails*.

1014.1 Where required. *Handrails* serving flights of *stairways*, *ramps*, stepped *aisles* and ramped *aisles* shall be adequate in strength and attachment in accordance with Section 1607.8. *Handrails* required for flights of *stairways* by Section 1011.11 shall comply with Sections 1014.2 through 1014.9. *Handrails* required for ramps by Section 1012.8 shall comply with Sections 1014.2 through 1014.8. *Handrails* for stepped *aisles* and ramped *aisles* required by Section 1029.15 shall comply with Sections 1014.2 through 1014.8.

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F8339

Date Submitted	12/15/2018	**Section**	1011.16	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarifies currently existing ladder construction requirements.

Rationale

Section 306.5 of the FMC provides guidance on where ladders can be used to access equipment and for the technical criteria to construct the ladder (see the reason of the original change for text). The concern is the exact wording of Section 1009.18, Item 6. The list in Section 1011.6 is locations where ladders can be used. Item 6 is revised to limit the reference to where the ladders are permitted in FMC Section 306.5. How ladders are to be constructed is moved to the base paragraph so it is clear what technical requirements are to be followed where a ladder is provided in any of the 6 locations.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There is no change to the technical requirements, so no impact.

Impact to building and property owners relative to cost of compliance with code

There is no change to the technical requirements, so no impact in cost.

Impact to industry relative to the cost of compliance with code

There is no change to the technical requirements, so no impact in cost.

Impact to small business relative to the cost of compliance with code

There is no change to the technical requirements, so no impact in cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

A simple clarification. No technical changes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

A simple clarification. No technical changes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

A simple clarification. No technical changes.

Does not degrade the effectiveness of the code

A simple clarification. No technical changes.

1011.16 Ladders. Permanent ladders shall not serve as a part of the *means of egress* from occupied spaces within a building. Permanent ladders shall be constructed in accordance with Section 306.5 of the Florida Mechanical Code. Permanent ladders shall be permitted to provide access to the following areas:

1. Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.
2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.
4. Elevated levels in Group U not open to the general public.
5. Nonoccupied roofs that are not required to have *stairway* access in accordance with Section 1011.12.1.
6. ~~Ladders shall be constructed~~ Where permitted to access equipment and appliances in accordance with Section 306.5 of the Florida Mechanical Code.

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Date Submitted	12/15/2018	**Section**	1013.2	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Slightly increases the allowable height of an exit sign, coordinating this section with the Life Safety Code.

Rationale

The base code provides just a 2-inch tolerance for where the bottom of required low-energy exit signs must be located, which is often challenging for designers and property owners due to field conditions or desired interior finish and trim.
The proposed amendment is to allow the bottom of the required low-level exit signs to be located between 10 and 18 inches off the floor level. The additional 6 inches provides sufficient 'wiggle room' for designers and owners. Further, there is no impact on the level of life safety of the occupants of the Group R-1 occupancies since the low-level exit signs will still be visible below a smoke layer from a fire (in the zone in which the occupants would presumably be crawling.)
NFPA 101 (Life Safety Code), Section 7.10.1.6 permits the bottom of low-level exit signs to be installed between 6- and 18-inches above the floor level. Therefore, there is another code standard that allows the bottom of the low-level exit signs to be installed up to 18 inches above the floor level. Although NFPA 101, Section 7.10.1.6 permits the bottom of the low-level exit signs to be as low as 6-inches above the floor level, this proposal does not change the base requirement that the bottom of the low-level exit signs be within 10-inches above the floor level because the accessibility code requires door surfaces within 10 inches of the floor to be a smooth surface for the full width of the door. There is no reason to have the low-level exit sign installed on the door must be at least 10 inches above the floor level in order to comply.
This proposal address unique designs or systems not anticipated in the code. Further, this proposal is consistent with the upper bounds permitted by another national code (NFPA 101 Life Safety Code).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not increase time or expense in its enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
The proposal provides for more flexibility in how to meet the requirements for floor level exit signs.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
The proposal provides for more flexibility in how to meet the requirements for floor level exit signs.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
The proposal provides for more flexibility in how to meet the requirements for floor level exit signs.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposal provides for more flexibility in how to meet the requirements for floor level exit signs, and provides consistency with the NFPA 101, Life Safety Code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposal provides for more flexibility in how to meet the requirements for floor level exit signs, and provides consistency with the NFPA 101, Life Safety Code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal provides for more flexibility in how to meet the requirements for floor level exit signs, and provides consistency with the NFPA 101, Life Safety Code.

Does not degrade the effectiveness of the code

The proposal provides for more flexibility in how to meet the requirements for floor level exit signs, and provides consistency with the NFPA 101, Life Safety Code.

1013.2 Floor-level exit signs in Group R-1. Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5.

The bottom of the sign shall be not less than 10 inches (254 mm) nor more than ~~12~~ 18 inches (~~305~~455 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side.

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F8343

Date Submitted	12/15/2018	**Section**	1013.4	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Meant to coordinate with recent revisions to accessibility requirements.

Rationale

The intent is coordination with the accessibility standards for tactile exit signage.
The point of the tactile exit signage is to let a visually impaired person know what door they should enter to exit the building. When a stairway is accessed through an area of refuge, this signage is appropriate. Where the area of refuge is at the front of an elevator with standby power, this is not appropriate. Many lobbies have double doors with hold open devices, so there is also the question about where would be the correct location for this signage. This change in language will effectively not require the tactile exit signage at an elevator lobby.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no impact.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This is a possible reduction in signage.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This is a possible reduction in signage.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This is a possible reduction in signage.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will possibly reduce the amount of required signage.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Will possibly reduce the amount of required signage.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Will possibly reduce the amount of required signage.

Does not degrade the effectiveness of the code

Will possibly reduce the amount of required signage, but will not degrade the effectiveness of the code.

1013.4 Raised character and braille exit signs. A sign stating EXIT in visual characters, raised characters and braille and complying with the *Florida Building Code, Accessibility* shall be provided adjacent to each door to an *area of refuge* providing direct access to a *stairway*, an exterior area for assisted rescue, an *exit stairway* or *ramp*, an *exit passageway* and the *exit discharge*.

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F8345

Date Submitted	12/15/2018	**Section**	1015.3	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Meant to coordinate provisions of the FBC, Building and the FBC, Residential

Rationale

The purpose of this proposal is coordination between the FBC and FRC. The phrase 'or adjacent fixed seating' was in exception 1 to coordinate with the provisions for guard height in the FRC. Previous edition of the FBC and FRC required guards to be placed adjacent to fixed seating that occurs on areas such as decks where the seat and guard are built integral with the deck. At those locations the guard height was measured from that seat. The requirement to measure from the fixed seating has been removed from the FBC and FRC

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Should not impact code enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This proposal could result in a reduction of the required guard height. This is coordination with the FRC.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal could result in a reduction of the required guard height. This is coordination with the FRC.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal could result in a reduction of the required guard height. This is coordination with the FRC.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Coordinates requirements of the FBC and FRC, providing consistency.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Coordinates requirements of the FBC and FRC, providing consistency.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Coordinates requirements of the FBC and FRC, providing consistency.

Does not degrade the effectiveness of the code

Coordinates requirements of the FBC and FRC, providing consistency.

1015.3 Height.

Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the *guard*.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces ~~or adjacent fixed seating~~.
2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* also serves as a *handrail* on the open sides of *stairs* , the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. The *guard* height in assembly seating areas shall comply with Section 1029.16 as applicable.
5. Along *alternating tread devices* and *ships ladders*, *guards* where the top rail also serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosing*.

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Date Submitted	12/15/2018	**Section**	1015.6	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

FBC Section 1015.7 and FMC Section 304.11

Summary of Modification

Modifies requirements for fall arrest anchorage for steep roofs.

Rationale

Section 306.5.1 of the FMC requires work platforms with guards for equipment and appliances installed on roofs with a slope 3 in 12 and greater, thus, the exception to Section 304.11 appears to apply only to roofs that are flat and up to 2 in 12 slope. The problem derives from the language referring to placement of anchors along hip or ridge lines and along roof edges. This language is not necessary for the application of the exception. Each building roof system and the equipment upon that roof system that might require access will be different and the anchors needed along with their locations will differ as well. As presently worded there has been some confusion on application and the location requirements spaced every ten feet require unnecessary expense. This proposal eliminates confusion by deleting the unnecessary language leaving the application of the referenced standard to be applied on a case by case basis to fit the specific activities that may occur on the individual roof.
There is another change from this committee to split FMC 304.11 to make it consistent with the FRC that copies this exception. It is the intent of this committee for these changes to be coordinated.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not affect code enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal will decrease the cost of construction in those cases where fall arrest anchorage devices would be installed instead of guards by providing increased flexibility in locating the anchors.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Coordinates and clarifies guarding/fall arrest anchorage requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Coordinates and clarifies guarding/fall arrest anchorage requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Will have no effect on materials or methods.

Does not degrade the effectiveness of the code

Coordinates and clarifies guarding/fall arrest anchorage requirements.

1015.6 Mechanical equipment, systems and devices. *Guards* shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall extend not less than 30 inches (762 mm) beyond each end of such components. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception:*Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are ~~affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface~~ installed.

1015.7 Roof access. *Guards* shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception:*Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are ~~affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface~~ installed.

Florida Mechanical Code

304.11 Guards. *Guards* shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The *guard* shall extend not less than 30 inches (762 mm) beyond each end of components that require service. The top of the *guard* shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the *guard*. The *guard* shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for *guards* specified in the *Florida Building Code, Building*.

Exception: *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are ~~affixed for use during the entire lifetime of the roof covering. The devices shall be re-evaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from roof edges and the open sides of walking surfaces~~ installed.

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F8349

220

Date Submitted	12/15/2018	**Section**	1017.3	**Proponent**	Ann Russo2
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Section 202 - definition of Common Path of Egress Travel

Summary of Modification

Meant to provide clarification of current path of egress travel requirements.

Rationale

The definition of "common path of egress travel" was recently modified. The intent of the change was to clarify the common path of egress travel and exit access travel distance are measured in the same way. The terminus of each is different, but the route is the same.

If applied literally, it could be interpreted such that the common path of egress travel need be considered from only one point (the most remote) on a given story. Obviously, all potential paths of egress travel need to be considered when establishing occupant remoteness for the purposes of determining multiple exit or exit access doorway requirements. Clarifying that the path of travel originating from any room, area or space should be evaluated when determining common paths of egress travel will eliminate literal interpretations of the current definition. Additionally, the reference to a single story has been eliminated. Section 1006.3 allows for access to exits at an adjacent level. Common path of egress travel requirements could potentially apply to a multi-level design condition.

For purposes of consistency, Section 1017.3 has been modified to indicate that exit access travel distance is measured from all remote points within the means of egress system. The "story" approach is a little simplistic and does not represent the level of detail necessary to properly design or analyze a means of egress system. Additionally, when accessing an exit at an adjacent level, the exit access travel distance at both stories, to include the exit access stairways, is calculated. The single story reference could be misleading. Approval of this modification will clarify the definition of common path of egress travel for the benefit of all users.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will have no effect. A simple clarification of current requirements.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
Provisions simply provide clarification of current requirements.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
Provisions simply provide clarification of current requirements.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
Provisions simply provide clarification of current requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

A simple clarification of current requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

A simple clarification of current requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

A simple clarification of current requirements.

Does not degrade the effectiveness of the code

A simple clarification of current requirements.

SECTION 202 DEFINITIONS

COMMON PATH OF EGRESS TRAVEL. That portion of ~~the~~ *exit access* travel distance measured from the most remote point ~~within a story~~ of each room, area or space to that point where the occupants have separate and distinct access to two *exits* or *exit access doorways*.

1017.3 Measurement. *Exit access* travel distance shall be measured from the most remote point ~~within a story~~ of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an *exit*.

Exception: In *open parking garages, exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

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F7531

Date Submitted	11/28/2018	**Section**	1208.2	**Proponent**	Ann Russo1
Chapter	12	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarification and coordination of current requirements.

Rationale

The proposal will improve consistency in language throughout the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The proposal will improve consistency in language throughout the code.

Impact to building and property owners relative to cost of compliance with code

Will not increase cost.

Impact to industry relative to the cost of compliance with code

Will not increase cost.

Impact to small business relative to the cost of compliance with code

Will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal will help clarify and coordinate the current code requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the application of the code and will provide clarity to the current code requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the application of the code and will provide clarity to the current code requirements.

Revise as follows:

1208.2 Minimum ceiling heights. Occupiable spaces, *habitable spaces* and *corridors* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor. Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

Exceptions:

1. In one- and two-family *dwellings*, beams or girders spaced not less than 4 feet (1219 mm) on center shall be permitted to project not more than 6 inches (152 mm) below the required ceilingheight.
2. If any room in a building has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum areathereof.
3. The height of *mezzanines* and spaces below *mezzanines* shall be in accordance with Section505.1.
4. Corridors contained within a *dwelling unit* or *sleeping unit* in a Group R occupancy shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

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F7242

Date Submitted	11/13/2018	**Section**	1407	**Proponent**	Andy Williams
Chapter	14	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Eliminate Alternate Conditions allowable for Metal Composite Materials (MCM)

Rationale

Fire events around the world have made everyone rethink how MCM panels fit within the construction landscape. While many, if not all, of the fires have involved product and/or wall assemblies that would not have been allowed to be constructed under the code, it is clear that there are questions regarding the allowable use of standard core and fire resistive MCM panels. The MCM Manufacturers that are members of the Metal Construction Association agree that to simplify the application of MCM, Section 1407.11 Alternate conditions, which is based on the allowable use of other combustible exterior envelope materials within the code, should be removed. This will eliminate questions from both designers and code compliance officials on the appropriate product to use.

The clarification of MCM and MCM systems is added because Section 1407.10.1 specifically applies to the MCM "panel" (referred to as MCM in the code). Sections 1407.10.2 through 1407.10.4 reference both MCM and MCM systems.

By using the "40 feet above grade plane" limit as a trigger for MCM system compliance with NFPA 285, the product decision is simplified and the code is made more clear.

The majority of the domestic MCM manufacturers are represented as members of the Metal Construction Association and all agreed unanimously to support this proposed change.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Positive - Should make compliance easier to understand and the enforcement of the code clearer

Impact to building and property owners relative to cost of compliance with code

Minimal - The material cost differential between standard core and fire resistive material is minimal. Material inventories may lead to longer lead time and require additional planning.

Impact to industry relative to the cost of compliance with code

Minimal - The product manufacturers are the proponents of this proposal and are is support of this position

Impact to small business relative to the cost of compliance with code

None - The fabrication and installation of either material is essentially identical.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarification of material choice and ease of compliance with code requirements. The general public will not realize any visual or performance difference however the fire safety will be improved on a small segment of structures.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Makes code compliance easier to understand and enforce by elimination of alternate conditions listed in 1407.11

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The products involved in this code change are interchangeable.

Does not degrade the effectiveness of the code

This proposal would increase the effectiveness of the code by minimizing alternate conditions and clarifying design and performance requirements.

?REVISE AS FOLLOWS:

1407.10 Type I, II, III and IV construction.

Where installed on buildings of Type I, II, III and IV construction, MCMs and MCM systems shall comply with Sections 1407.10.1 through 1407.10.3 for installations up to 40 feet (12192 mm) above grade plane. Where installed on buildings of Type I, II, III, and IV construction, MCMs and MCM systems shall comply with Sections 1407.10.1 through 1407.10.4 for installations greater than 40 feet (12192 mm) above grade plane.~~1407.10.4, or Section 1407.11.~~

DELETE WITHOUT SUBSTITUTION

~~1407.11 Alternate conditions.~~

~~MCM and MCM systems shall not be required to comply with Sections 1407.10.1 through 1407.10.4 provided such systems comply with Section 1407.11.1, 1407.11.2, 1407.11.3 or 1407.11.4.~~

~~1407.11.1 Installations up to 40 feet in height.~~

~~MCM shall not be installed more than 40 feet (12 190 mm) in height above grade where installed in accordance with Sections 1407.11.1.1 and 1407.11.1.2.~~

~~1407.11.1.1 Fire separation distance of 5 feet or less.~~

~~Where the fire separation distance is 5 feet (1524 mm) or less, the area of MCM shall not exceed 10 percent of the exterior wall surface.~~

~~1407.11.1.2 Fire separation distance greater than 5 feet.~~

~~Where the fire separation distance is greater than 5 feet (1524 mm), there shall be no limit on the area of exterior wall surface coverage using MCM.~~

~~1407.11.2 Installations up to 50 feet in height.~~

~~MCM shall not be installed more than 50 feet (15 240 mm) in height above grade where installed in accordance with Sections 1407.11.2.1 and 1407.11.2.2.~~

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~~1407.11.2.1 Self-ignition temperature.~~

~~MCM shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929.~~

~~1407.11.2.2 Limitations.~~

~~Sections of MCM shall not exceed 300 square feet (27.9 m^2) in area and shall be separated by not less than 4 feet (1219 mm) vertically.~~

~~1407.11.3 Installations up to 75 feet in height (Option 1).~~

~~MCM shall not be installed more than 75 feet (22 860 mm) in height above grade plane where installed in accordance with Sections 1407.11.3.1 through 1407.11.3.5.~~

~~Exception: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall be exempt from the height limitation.~~

~~1407.11.3.1 Prohibited occupancies.~~

~~MCM shall not be permitted on buildings classified as Group A-1, A-2, H, I-2 or I-3 occupancies.~~

~~1407.11.3.2 Nonfire-resistance-rated exterior walls.~~

~~MCM shall not be permitted on exterior walls required to have a fire-resistance rating by other provisions of this code.~~

~~1407.11.3.3 Specifications.~~

~~MCM shall be required to comply with all of the following:~~

1. ~~1.MCM shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929.~~
2. ~~2.MCM shall conform to one of the following combustibility classifications when tested in accordance with ASTM D635:~~
   - ~~Class CC1: Materials that have a burning extent of 1 inch (25 mm) or less when tested at a nominal thickness of 0.060 inch (1.5 mm) or in the thickness intended for use.~~
   - ~~Class CC2: Materials that have a burning rate of $2^1/_2$ inches per minute (1.06 mm/s) or less when tested at a nominal thickness of 0.060 inch (1.5 mm) or in the thickness intended for use.~~

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1407.11.3.4 Area limitation and separation.

The maximum area of a single MCM panel and the minimum vertical and horizontal separation requirements for MCM panels shall be as provided for in Table 1407.11.3.4. The maximum percentage of exterior wall area of any story covered with MCM panels shall not exceed that indicated in Table 1407.11.3.4 or the percentage of unprotected openings permitted by Section 705.8, whichever is smaller.

Exception: In buildings provided with flame barriers complying with Section 705.8.5 and extending 30 inches (760 mm) beyond the exterior wall in the plane of the floor, a vertical separation shall not be required at the floor other than that provided by the vertical thickness of the flame barrier.

TABLE 1407.11.3.4

AREA LIMITATION AND SEPARATION REQUIREMENTS FOR MCM PANELS

FIRE SEPARATION DISTANCE (feet)	COMBUSTIBILITY CLASS OF MCM	MAXIMUM PERCENTAGE AREA OF EXTERIOR WALL COVERED WITH MCM PANELS	MAXIMUM SINGLE AREA OF MCM PANELS (square feet)	MINIMUM SEPARATION OF MCM PANELS (feet)	
				Vertical	Horizontal
Less than 6	—	Not Permitted	Not Permitted	—	—
6 or more but less than 11	CC1	10	50	8	4
	CC2	Not Permitted	Not Permitted	—	—
11 or more but less than or equal to 30	CC1	25	90	6	4
	CC2	15	70	8	4
More than 30	CC1	50	Not Limited	3[a]	0
	CC2	50	100	6[a]	3

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

1. a.For reductions in the minimum vertical separation, see Section 1407.11.3.4.

1407.11.3.5 Automatic sprinkler system increases.

Where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the maximum percentage area of exterior wall of any story covered with MCM panels and the maximum square footage of a single area of MCM panels in Table 1407.11.3.4 shall be increased 100 percent. The area of MCM panels shall not exceed 50 percent of the exterior wall area of any story or the area permitted by Section 704.8 for unprotected openings, whichever is smaller.

1407.11.4 Installations up to 75 feet in height (Option 2).

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~~MCM shall not be installed more than 75 feet (22 860 mm) in height above grade plane where installed in accordance with Sections 1407.11.4.1 through 1407.11.4.4.~~

~~Exception: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall be exempt from the height limitation.~~

~~1407.11.4.1 Minimum fire separation distance.~~

~~MCM shall not be installed on any wall with a fire separation distance less than 30 feet (9 144 mm).~~

~~Exception: Where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the fire separation distance shall be permitted to be reduced to not less than 20 feet (6096 mm).~~

~~1407.11.4.2 Specifications.~~

~~MCM shall be required to comply with all of the following:~~

1. ~~1.MCM shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929.~~
2. ~~2.MCM shall conform to one of the following combustibility classifications when tested in accordance with ASTM D635:~~
   - ~~Class CC1: Materials that have a burning extent of 1 inch (25 mm) or less when tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use.~~
   - ~~Class CC2: Materials that have a burning rate of $2^{1}/_{2}$ inches per minute (1.06 mm/s) or less when tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use.~~

~~1407.11.4.3 Area and size limitations.~~

~~The aggregate area of MCM panels shall not exceed 25 percent of the area of any exterior wall face of the story on which those panels are installed. The area of a single MCM panel installed above the first story above grade plane shall not exceed 16 square feet (1.5 m^2) and the vertical dimension of a single MCM panel shall not exceed 4 feet (1219 mm).~~

~~Exception: Where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the maximum aggregate area of MCM panels shall be increased to 50 percent of the exterior wall face of the story on which those panels are installed and there shall not be a limit on the maximum dimension or area of a single MCM panel.~~

~~1407.11.4.4 Vertical separations.~~

~~Flame barriers complying with Section 705.8 and extending 30 inches (762 mm) beyond the exterior wall or a vertical separation of not less than 4 feet (1219 mm) in height shall be provided to separate MCM panels located on the exterior walls at one-story intervals.~~

~~Exception: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

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F8233

Date Submitted	12/14/2018	**Section**	1406.3	**Proponent**	John Woestman
Chapter	14	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal, in 1406.3, seeks to allow plastic composites meeting the specified criteria to be used in the same applications where untreated wood may be used in balcony construction. Similar in 2612.5.

Rationale

In Section 1406.3, plastic composites which comply with ASTM D7032 and Section 2612.3 are required to be tested to ASTM E84 and achieve a flame spread index of not more than 200. While most untreated wood has an ASTM E84 flame spread index below 200, a few species of untreated wood has a FSI of potentially over 200 (Ponderosa Pine, Northern White Pine), and a few species have FSI approaching 200 (Southern Pine, Poplar). Source: http://www.fpl.fs.fed.us/documnts/fplgtr/fplgtr190/chapter_18.pdf. This proposal, in 1406.3, seeks to allow plastic composites meeting the specified criteria to be used in the same applications where untreated wood may be used in balcony construction.
Regarding Section 2612.5: In the IBC, there are several specific exterior applications where combustible construction is allowed, or where noncombustible construction is not required, with buildings of other than Type VB. This proposal seeks to allow plastic composites which comply with the requirements of Section 2612 in those applications. IBC Section 1403.6 Balconies, is one of those applications. IBC 3104.3 Pedestrian walkways, is another.

Cost impact: Will not increase the cost of construction. No mandatory cost increase. This proposal would allow additional materials (plastic composites) to be used in several specific applications. It may be noted plastic composites generally cost more than wood but the use of plastic composites is at the discretion of the building owner.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Provides clear requirements for use of plastic composites where other combustible materials are allowed in Type III, IV, and V construction. Should be no difficulties with enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction or code compliance. This proposal allows additional materials (plastic composites) to be used in several specific applications. Plastic composites generally cost more than wood but the use of plastic composites is at the discretion of the building owner.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction or code compliance. This proposal allows additional materials (plastic composites) to be used in several specific applications. Plastic composites generally cost more than wood but the use of plastic composites is at the discretion of the building owner.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction or code compliance. This proposal allows additional materials (plastic composites) to be used in several specific applications. Plastic composites generally cost more than wood but the use of plastic composites is at the discretion of the building owner.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Does not weaken code requirements regarding use of combustible materials.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by including appropriate requirements for material desired to be used.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate. Requires compliance to an industry standard currently referenced in the code.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

1406.3 Balconies and similar projections.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of Type IV construction in accordance with Section 602.4. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:

1. On buildings of Type I and II construction, three stories or less above grade plane, fire-retardant-treated wood shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.

2. Untreated wood, and plastic composites which comply with ASTM D7032 and Section 2612, are ~~is~~ permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.

3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a fire-resistance rating where sprinkler protection is extended to these areas.

4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

SECTION 2612

PLASTIC COMPOSITES

2612.5 Construction requirements. Plastic composites meeting the requirements of Section 2612 shall be permitted to be used as exterior deck boards, stair treads, handrails and ~~guards in buildings of Type VB~~ where combustible construction is permitted.

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F8271

Date Submitted	12/14/2018	**Section**	1406.3	**Proponent**	Paul Coats
Chapter	14	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265, 8267, 8269, 8270

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

1. 1406.3 Balconies and similar projections.

Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~ heavy timber construction in accordance with Section ~~602.4~~ 2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:

1. 1.On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. 2.Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. 3.Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. 4.Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

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406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F7703

Date Submitted	12/10/2018	**Section**	1505	**Proponent**	Jon Roberts
Chapter	15	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Chapter 35

Summary of Modification

The testing for photovoltaic panel systems are covered in both UL 1703 and UL 2703. This proposal adds two new UL standards to this section, UL 1703 and 2703, which are ANSI consensus standards. These standard provide the test method for testing panels and mounting systems.

Rationale

UL 1703 includes partial fire testing of the photovoltaic panel, which is one of the components of the photovoltaic panel system. UL 2703 uses the results of that component testing, and includes further evaluation and testing of the photovoltaic panel system (i.e. the photovoltaic panel and the rack support system) to establish the Fire Classification for the system. UL 1703 is referenced within UL 2703.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Fire classification of these systems are determined in accordance with UL 2703 currently so there is no significant impact on enforcement.

Impact to building and property owners relative to cost of compliance with code

Fire classification of these systems are determined in accordance with UL 2703 currently so there is no cost impact for compliance.

Impact to industry relative to the cost of compliance with code

Fire classification of these systems are determined in accordance with UL 2703 currently so there is no cost impact for compliance.

Impact to small business relative to the cost of compliance with code

Fire classification of these systems are determined in accordance with UL 2703 currently so there is no cost impact for compliance.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Fire classification of these systems are determined in accordance with UL 2703 currently and adding this to the code will ensure a greater level of safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Since fire classification of these systems are determined in accordance with UL 2703 currently adding this to the code will improve the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This uses current practices and does not discriminate against other methods.

Does not degrade the effectiveness of the code

This improves the code it does not degrade it.

1505.9 ~~Photovoltaic panels and modules.~~ Rooftop mounted photovoltaic panel systems.

Rooftopmounted *photovoltaic panel systems* shall be tested, *listed* and identified with a fire classification in accordance with UL 1703 or UL2073. The fire classification shall comply with Table 1505.1 based on the type of construction of the building.

Chapter 35

Add new standard(s) as follows:

UL 2703-14, Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with FlatPlate Photovoltaic Modules and Panel

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F7872

Date Submitted	12/11/2018	**Section**	1505	**Proponent**	Jon Roberts
Chapter	15	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Adds guidance by referencing table 501 for building integrated photovoltaic products to ensure that they have the proper fire classification.

Rationale

This assists the code official by providing guidance related to the fire classification of these types of products.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

These products are already in use. This will assist the code official and make enforcement easier.

Impact to building and property owners relative to cost of compliance with code

There is no cost impact related to this as these products are already in use today.

Impact to industry relative to the cost of compliance with code

There is no cost impact related to this as these products are already in use today.

Impact to small business relative to the cost of compliance with code

There is no cost impact related to this as these products are already in use today.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This ensures the proper fire classification of these integrated products and that can increase safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This improves the code by putting this information where it can readily be accessed by the code official.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate against other products.

Does not degrade the effectiveness of the code

This does not degrade the code.

1505.8 Building-integrated photovoltaic products.

Building-integrated photovoltaic products **installed as the roof covering shall be tested, *listed* and *labeled* for fire classification in accordance with Section 1505.1.**

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F8273

Date Submitted	12/14/2018	**Section**	1510.2.5	**Proponent**	Paul Coats
Chapter	15	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265, 8267, 8269, 8270, 8271

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

1. [BG] **1510.2.5 Type of construction.**

Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

1. 1.On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. 2.On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. 3.On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~ heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3Tanks.

Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~ heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F8292

Date Submitted	12/15/2018	**Section**	1505	**Proponent**	Chadwick Collins
Chapter	15	**Affects HVHZ**	Yes	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Address inconsistency between FBC and FBC-R fire requirements.

Rationale

It stands to reason that the fire classification requirements in the FBC should not be less stringent than those in the FBC-R. All buildings permitted under the FBC-R require a Class A, B, or C classification. The above table, if left as written, would permit unclassified roof coverings on buildings of Use Group R-3, which can include two-family dwellings with up to 16 occupants.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

$0

Impact to building and property owners relative to cost of compliance with code

$0

Impact to industry relative to the cost of compliance with code

$0

Impact to small business relative to the cost of compliance with code

$0

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Addresses possible risk to occupants as currently written.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code in regard to the systems called for in relation to possible occupancy.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Proposed change addresses a level of performance in regard to welfare of occupants and not any specific product or system.

Does not degrade the effectiveness of the code

Strengthens the intent of the code.

See attached file.

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TABLE 1505.1[a, b]
MINIMUM ROOF COVERING CLASSIFICATION
FOR TYPES OF CONSTRUCTION

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	C[c]	B	C[c]	B	B	C[c]

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m2.

a. Unless otherwise required in accordance with the International Wildland- Urban Interface Code or due to the location of the building within a fire district in accordance with Appendix D.

b. Nonclassified roof coverings shall be permitted on buildings of ~~Group R-3 and~~ Group U occupancies, where there is a minimum fire-separation distance of 6 feet measured from the leading edge of the roof.

c. Buildings that are not more than two stories above grade plane and having not more than 6,000 square feet of projected roof area and where there is a minimum 10-foot fire-separation distance from the leading edge of the roof to a lot line on all sides of the building, except for street fronts or public ways, shall be permitted to have roofs of No. 1 cedar or redwood shakes and No. 1 shingles constructed in accordance with Section 1505.7.

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F8295

Date Submitted	12/15/2018	**Section**	1516	**Proponent**	Chadwick Collins
Chapter	15	**Affects HVHZ**	Yes	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Alignment of fire classification between HVHZ and non-HVHZ (Section 1505)

Rationale

This proposal aligns the HVHZ fire classification requirements with those in the Non-HVHZ Section 1505 .

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

$0

Impact to building and property owners relative to cost of compliance with code

$0

Impact to industry relative to the cost of compliance with code

$0

Impact to small business relative to the cost of compliance with code

$0

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies Class A assemblies for use

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides equivalency in fire classification between HVHZ and non-HVHZ

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Proposed language lists more systems than prior language

Does not degrade the effectiveness of the code

Aligns HVHZ to non-HVHZ while not lowering the threshold of Class A performance.

See attached file.

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1516.2.1 Class A. Zero feet to 20 feet (0 to 6.1 m) distance separation measured horizontally from the closest point of any building edge to the nearest point to an adjoining structure, and all buildings with occupation greater than 300 persons.

~~**Exception:** Brick, masonry, slate, clay or concrete roof tile and exposed concrete roof deck are considered to meet Class A roof covering provisions without testing.~~

Exceptions:

1. Class A roof assemblies include those with coverings of brick, masonry or an exposed concrete roof deck.
2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on noncombustible decks or ferrous, copper or metal sheets installed without a roof deck on noncombustible framing.
3. Class A roof assemblies include minimum 16 ounce per square foot (0.0416 kg/m2) copper sheets installed over combustible decks.

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F8201

Date Submitted	12/14/2018	**Section**	2406.4.5	**Proponent**	Anthony Miller
Chapter	24	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This modification clarifies that the sacrificial outboard panes of laminated, insulated glass windows are not required to be safety glazed if they are not exposed to potential hazards.

Rationale

If a laminated, insulated glass window is installed in a wall that is exposed to a slip hazard, provided the laminated inboard lite of the window (adjacent to the hazard) is safety-glazed, the sacrificial outboard lite should not require safety glazing if it is not exposed to any potential hazards.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There currently exists confusion regarding whether or not the outboard lite is required to be safety-glazed. This modification will clarify the requirement.

Impact to building and property owners relative to cost of compliance with code

This modification does not impact the cost associated with compliance with the code.

Impact to industry relative to the cost of compliance with code

This modification does not impact the cost associated with compliance with the code.

Impact to small business relative to the cost of compliance with code

This modification does not impact the cost associated with compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification will not adversely affect the health, safety or welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code as it clarifies a requirement which is currently causing confusion in the industry.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate.

Does not degrade the effectiveness of the code

This modification does not degrade the effectiveness of the code.

2406.4.5 Glazing and wet surfaces.
Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor or outdoor swimming pools where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface shall be considered a hazardous location. This shall apply to single glazing and all panes in multiple glazing.

Exceptions:
1. Glazing that is more than 60 inches (1524 mm), measured horizontally and in a straight line, from the water's edge of a bathtub, hot tub, spa, whirlpool or swimming pool.
2. Outboard sacrificial panes in laminated insulating glass units in walls where the exterior of the unit is not exposed to any of the hazardous locations specified in 2406.4.3 or 2406.4.5.

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F7847

Date Submitted	12/10/2018	**Section**	2603.4	**Proponent**	Marcelo Hirschler
Chapter	26	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal adds a suitable thermal barrier material.

Rationale

Thermal barriers are materials that comply with NFPA 275. In order to comply with NFPA 275 thermal barrier materials (in combination with the foam plastic insulation they are supposed to protect) are supposed to resist flashover after exposure to a room-corner test (using a test specimen that covers 3 walls and the ceiling of an 8 ft. by 12 ft. by 8 ft. room) such as NFPA 286, as well as comply with a number of other requirements (peak heat release rate of no more than 800 kW, flames that don't reach the extremities of the test specimen, total smoke release of no more than 1,000 m2). As an alternative to testing to NFPA 286 the thermal barriers are allowed to be tested to FM 4880, UL 1040 or UL 1715, all severe large scale tests.

Beyond the test just mentioned, thermal barriers must also be able to pass a fire resistance test using a time-temperature curve like the one in ASTM E119 for 15 minutes. It is clear (and fire test data have shown this) that thin wood panel materials will not comply with these requirements, because if a thin wood panel,

covering a foam plastic insulation material, is exposed to the fire source in NFPA 286, it will reach flashover well before the end of the 15 minute test period.

Discussions held during ICC hearings addressed the interest by some proponents that a wood material be permitted to be used as a thermal barrier without testing. Therefore, this proposal suggests that heavy timber is a wood material that could safely be used as a thermal barrier, while thin wood panels are not appropriate thermal barriers.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Adds an alternative thermal barrier material

Impact to building and property owners relative to cost of compliance with code

No added cost for compliance

Impact to industry relative to the cost of compliance with code

No added cost for compliance

Impact to small business relative to the cost of compliance with code

No added cost for compliance - provides an additional alternative

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No effect

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides an alternate products

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials or products

Does not degrade the effectiveness of the code

Does not degrade the code

2603.4 Thermal barrier. Except as provided for in Sections 2603.4.1 and 2603.9, foam plastic shall be separated from the interior of a building by an approved thermal barrier of 1 /2-inch (12.7 mm) gypsum wallboard, heavy timber in accordance with Section 602.4, or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature
Transmission Fire Test and the Integrity Fire Test of NFPA 275. Combustible concealed spaces shall comply with Section 718.

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F8236

Date Submitted	12/14/2018	**Section**	2612	**Proponent**	John Woestman
Chapter	26	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal is intended to be clarifications and simplification of the requirements for plastic composites identified in this section of the FBC.

Rationale

This proposal is intended to be clarification and simplification of the requirements for plastic composites identified in this section.
The 2017 FBC included, for the first time, specific requirements for plastic composite deck boards, stair treads, and guard systems. This language was developed and finalized during the 2012 ICC code development cycle for the 2015 IBC. The following year (2013), the requirements in the IRC for these same products were revised, but the result is there are some differences between the 2015 IBC and the 2015 IRC. This code change proposal is an effort to move the language of the 2018 IBC and the 2020 FBC to be in close alignment with the language of the 2015 IRC and 2017 Florida Building Code, Residential.
Cost: No cost implications. No technical changes to the code requirements.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Updated, revised, and clarified requirements for plastic composite deck boards, stair treads, and guard systems should help with interpretation and enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

No cost implications. No technical changes to the code requirements.

Impact to industry relative to the cost of compliance with code

No cost implications. No technical changes to the code requirements.

Impact to small business relative to the cost of compliance with code

No cost implications. No technical changes to the code requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Updated, revised, and clarified requirements for plastic composite deck boards, stair treads, and guard systems should help with interpretation and enforcement of the code, and help to ensure the appropriate product is selected and installed correctly.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate. Requires plastic composite deck boards, stair treads, and guard systems to comply with an industry accepted standard currently referenced in the code.

Does not degrade the effectiveness of the code

Improves the effectiveness of the code.

Revise as follows:

SECTION 2612

PLASTIC COMPOSITES

2612.1 General. Plastic composites shall consist of either wood/plastic composites or plastic lumber. Plastic composites shall comply with the provisions of this code and with the additional requirements of Section 2612.

~~**2612.2 Labeling and identification.** Packages and containers of plastic composites used in exterior applications shall bear a *label* showing the manufacturer's name, product identification and information sufficient to determine that the end use will comply with code requirements.~~

> ~~**2612.2.1 Performance levels.** The label for plastic composites used in exterior applications as deck boards, stair treads, handrails and guards shall indicate the required performance levels and demonstrate compliance with the provisions of ASTM D 7032.~~
>
> ~~**2612.2.2 Loading.** The label for plastic composites used in exterior applications as deck boards, stair treads, handrails and guards shall indicate the type and magnitude of the load determined in accordance with ASTM D 7032~~.

2612.2 Labeling. Plastic composite deck boards and stair treads, or their packaging, shall bear a *label* that indicates compliance to ASTM D7032 and includes the allowable load and maximum allowable span determined in accordance with ASTM D7032. Plastic composite handrails and guards, or their packaging, shall bear a *label* that indicates compliance to ASTM D7032 and includes the maximum allowable span determined in accordance with ASTM D7032.

2612.3 Flame spread index. Plastic composites deck boards, stair treads, handrails and guards shall exhibit a flame spread index not exceeding 200 when tested in accordance with ASTM E 84 or UL 723 with the test specimen remaining in place during the test.

Exception: Materials determined to be noncombustible in accordance with Section 703.5.

2612.4 Termite and decay resistance. Where required by Section 2304.12 ~~P~~plastic composites deck boards, stair treads, handrails and guards containing wood, cellulosic or any other biodegradable materials shall be termite and decay resistant as determined in accordance with ASTM D 7032.

2612.5 Construction requirements. Plastic composites shall be permitted to be used as exterior deck boards, stair treads, handrails and guards in buildings of Type VB construction.

> **2612.5.1 Span rating.** Plastic composites used as exterior deck boards shall have a span rating determined in accordance with ASTM D 7032.

2612.6 Plastic composite deck~~ing~~ boards, stair treads, handrails and guards. Plastic composite deck~~ing~~ boards, stair treads, handrails and guards shall be installed in accordance with this code and the manufacturer's instructions.

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Date Submitted	12/14/2018	**Section**	2603.7	**Proponent**	John Woestman
Chapter	26	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal is intended to revise the requirements for foam plastic in plenums. There is a companion proposal for the Florida Mechanical Code. This code change is intended to not revise technical requirements, but clarifies the code's intent for the use of foam plastic in plenums.

Rationale

This proposal is intended to revise the requirements for foam plastic in plenums. There is a companion proposal for the Florida Mechanical Code. This code change is intended to not revise technical requirements, but clarifies the code's intent for the use of foam plastic in plenums. The following revisions are proposed:
2) The requirements for foam plastic in a plenum (currently 2603.7.2 Approval) are moved to the charging paragraph in proposed Section 2603.7.
3) Not including the last sentence in 2603.7 in this re-write of 2603.7 clearly establishes the ASTM E84 performance limits and NFPA 286 with the identified acceptance criteria in 803.1.2 as the qualifying tests for use of foam plastics exposed to the airflow in plenums.
4) The use of a thermal barrier (currently Section 2603.7.1 Separation required) separating the foam plastic from the airflow in the plenum is allowed and therefore listed as an exception.
5) The use of an alternate barrier (currently Section 2603.7.3 Covering) separating the foam plastic from the airflow in the plenum is allowed and therefore listed as an exception.
6) A new exception is added to recognize the use of masonry or concrete as a means to separate the foam plastic from the airflow in the plenum.
Masonry and concrete, with minimum 1 inch thickness, are approved thermal barriers for foam plastic per Section 2603.4.1.
7) A sentence is added to the Interior Finish and Trim (Section 2604.1) pointing back to the plenum requirements in Section 2603.7.
The changes bring needed clarification regarding the approved barriers and corresponding flame spread and smoke-developed requirements for foam plastic used in plenums.

Cost Impact:
Part II: Will not increase the cost of construction No cost increase. This code proposal revises existing requirements without technical changes.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The revised text should be easier to understand and enforce, and should make code enforcement quicker.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. This code proposal revises existing requirements without technical changes.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction. This code proposal revises existing requirements without technical changes.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. This code proposal revises existing requirements without technical changes.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Easier to understand and enforce requirements for foam plastic materials in plenums should improve fire safety of plenums.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code with easier to understand and apply requirements.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

Delete and replace as shown:

~~**2603.7 Foam plastic insulation used as interior finish or interior trim in plenums.** Foam plastic insulation used as interior wall or ceiling finish or as interior trim in plenums shall exhibit a flame spread index of 75 or less and a smokedeveloped index of 450 or less when tested in accordance with ASTM E 84 or UL 723 and shall comply with one or more of Sections 2603.7.1, 2603.7.2 and 2607.3.~~

~~**2603.7.1 Separation required.** The foam plastic insulation shall be separated from the plenum by a thermal barrier complying with Section 2603.4 and shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use.~~

~~**2603.7.2 Approval.** The foam plastic insulation shall exhibit a flame spread index of 25 or less and a smoke-developed index of 50 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use and shall meet the acceptance criteria of Section 803.1.2 when tested in accordance with NFPA 286. The foam plastic insulation shall be approved based on tests conducted in accordance with Section 2603.9.~~

~~**2603.7.3 Covering.** The foam plastic insulation shall be covered by corrosion-resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm) and shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use.~~

-

2603.7 Foam plastic insulation in plenums as interior finish or interior trim. Foam plastic insulation in plenums used as interior wall or ceiling finish, or interior trim, shall exhibit a flame spread index of 25 or less and a smoke-developed index of 50 or less when tested in accordance with ASTM E 84 or UL 723 at the maximum thickness and density intended for use, and shall be tested in accordance with NFPA 286 and meet the acceptance criteria of Section 803.1.2.

Exceptions:

1. Foam plastic in plenums used as interior wall or ceiling finish, or interior trim, shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the maximum thickness and density intended for use, where it is separated from the airflow in the plenum by a thermal barrier complying with Section 2603.4.

2. Foam plastic in plenums used as interior wall or ceiling finish, or interior trim, shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the maximum thickness and density intended for use, where it is separated from the airflow in the plenum by corrosion resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm).

3. Foam plastic in plenums used as interior wall or ceiling finish, or interior trim, shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the maximum thickness and density intended for use, where it is separated from the airflow in the plenum by not less than a 1 inch (25mm) thickness of masonry or concrete.

Add new text as follows:

2604.1.1 Plenums. Foam plastics installed in plenums as interior wall or ceiling finish shall comply with Section 2603.7. Foam plastics installed in plenums as interior trim shall comply with Sections 2604.2 and 2603.7.

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F7365

Date Submitted	11/20/2018	**Section**	3111	**Proponent**	Bryan Holland
Chapter	31	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7345, 7347, 7348

Summary of Modification

This proposed modification updates requirement for solar energy systems in the FBC-B.

Rationale

This proposed modification deletes the current requirements in Section 3111 and replaces them with the updated rules in 3111 of the 2018 IBC that have been correlated and harmonized with current industry standards and other applicable references. This change is similar to those proposed under Mods 7345, 7347, and 7348 for inclusion into the FBC-R. This change will also coordinate the FBC-B with the FFPC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by coordinating the FBC-B with the FFPC for life, fire, and property safety related to solar energy system installations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by updating the rules for solar energy systems in the FBC-B.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

~~SECTION 3111~~

~~PHOTOVOLTAIC PANELS AND MODULES~~

~~3111.1 General. Photovoltaic panels and modules shall comply with the requirements of this code and the Florida Fire Prevention Code.~~

~~3111.1.1 Rooftop-mounted photovoltaic panels and modules. Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of Chapter 15 and the Florida Fire Prevention Code.~~

SECTION 3111

SOLAR ENERGY SYSTEMS

3111.1 General. Solar energy systems shall comply with the requirements of this section.

3111.1.1 Wind resistance. Rooftop-mounted photovoltaic panels and modules and solar thermal collectors shall be designed in accordance with Section 1609.

3111.1.2 Roof live load. Roof structures that provide support for solar energy systems shall be designed in accordance with Section 1607.13.5.

3111.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with the Florida Building Code-Plumbing, the Florida Building Code-Mechanical, and the Florida Fire Prevention Code.

3111.2.1 Equipment. Solar thermal systems and components shall be listed and labeled in accordance with ICC 900/SRCC 300 and ICC 901/SRCC 100.

3111.3 Photovoltaic solar energy systems. Photovoltaic solar energy systems shall be designed and installed in accordance with this section, the Florida Fire Prevention Code, NFPA 70 and the manufacturer's installation instructions.

3111.3.1 Equipment. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.

3111.3.2 Fire classification. Rooftop-mounted photovoltaic systems shall have a fire classification in accordance with Section 1505.9. Building-integrated photovoltaic systems shall have a fire classification in accordance with Section 1505.8.

3111.3.3 Building-integrated photovoltaic systems. Building-integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section 1507.18.

3111.3.4 Access and pathways. Roof access, pathways and spacing requirements shall be provided in accordance with Section 1204 of the Florida Fire Prevention Code.

3111.3.5 Ground-mounted photovoltaic systems. Ground-mounted photovoltaic systems shall be designed and installed in accordance with Chapter 16 and the Florida Fire Prevention Code.

3111.3.5.1 Fire separation distances. Ground-mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.

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F7534

Date Submitted	11/28/2018	**Section**	3104.5.2.2	**Proponent**	Michael Fox
Chapter	31	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Clarifies type of glass required for pedestrian walkways

Rationale

This clarifies the intent of the code section

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies intent of Code

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies intent of Code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Clarifies intent of Code

Does not degrade the effectiveness of the code

Clarifies intent of Code

. 3104.5.2.2 Glass.

The wall shall be constructed of a tempered, wired or laminated glass ~~wall~~ and doors ~~or glass~~ separating the interior of the building from the pedestrian walkway. The glass shall be protected by an automatic sprinkler system in accordance with Section 903.3.1.1 that, when actuated, shall completely wet the entire surface of interior sides of the wall or glass. Obstructions shall not be installed between the sprinkler heads and the wall or glass. The glass shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler operates.

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F8275

Date Submitted	12/14/2018	**Section**	3105.3	**Proponent**	Paul Coats
Chapter	31	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265, 8267, 8269, 8270, 8271, 8273

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

1.

1. 3105.3 Design and construction.

Awnings and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 and in accordance with Section 3105.4 of this code with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[a]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F7607

Date Submitted	11/30/2018	**Section**	3306.2	**Proponent**	Ann Russo5
Chapter	33	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The code provisions are based upon an assumption where the building or structure is completely contained within the construction site with no access by the general public. There are some perceptions that this code provision only applies to "the public right of way".

Rationale

The code provisions are based upon an assumption where the building or structure is completely contained within the construction site with no access by the general public. There are some perceptions that this code provision only applies to "the public right of way". Structures which are under renovation and still open to the public often have private property walkways leading to the entrances of the building and are not subject to the pedestrian protection provisions in the published Code. The same hazards which require protection of pedestrians at the public sidewalk may be present on the private property and should be subject to the same protection afforded to those persons on a public sidewalk.

This proposal corrects an oversight in the provision for walkways at construction sites.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Assists local jurisdictions in review of safety plans and enforcement of requirements

Impact to building and property owners relative to cost of compliance with code

Minimal and reduces contingent liability due to improper protection during construction activity

Impact to industry relative to the cost of compliance with code

Minimal costs but positive overall impact with regards to liability

Impact to small business relative to the cost of compliance with code

None expected

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves safety and welfare of public around construction activity in transiting areas in better safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves Code efficiency in areas of pedestrian protection during construction activity

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not

Does not degrade the effectiveness of the code

Improves effectiveness of Code

Modify as follows:

3306.2 Walkways.

A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the sidewalk to be fenced or closed. A walkway shall be provided for pedestrian travel that leads from a building entrance or exit of an occupied structure to a public way.Walkways shall be of sufficient width to accommodate the pedestrian traffic, but in no case shall they be less than 4 feet (1219 mm) in width. Walkways shall be provided with a durable walking surface. Walkways shall be *accessible* in accordance with Chapter 11 and shall be designed to support all imposed loads and in no case shall the design live load be less than 150 pounds per square foot (psf) (7.2 kN/m^2).

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F7548

Date Submitted	12/14/2018	**Section**	35	**Proponent**	Tim Earl
Chapter	35	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

7511 (Section 406.8.3)
7546 (Section 424.2)
7547 (Sections 804.2 and 804.3)

Summary of Modification

This change adds ASTM E648 as a referenced standard, as a companion to 3 proposals which add it as an option to NFPA 253, since they are equivalent tests and many labs produce reports labeled ASTM E648 instead of NFPA 253.

Rationale

ASTM E648 is technically equivalent to NFPA 253. Since the flooring industry routinely references ASTM E648, this proposal will remove confusion when test reports reference the ASTM test instead of the NFPA test. This proposal also correlates with the 2018 IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to building and property owners relative to cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Impact to industry relative to the cost of compliance with code

This change may result in a small costs savings to industry, since those who submit ASTM E648 test reports currently have to either ask the lab to provide another test report referencing NFPA 253, or have a code consultant explain to the code official that they are equivalent tests.

Impact to small business relative to the cost of compliance with code

No impact on cost. It may save time if the code official is unaware that the tests are equivalent. By explicitly allowing both tests in the code, there is no need for any of the parties involved to research the issue if the test report references ASTM E648 instead of NFPA 253.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This section is about the fire performance of flooring products, which is critical to life safety. The change itself simply improves the usability of the code by recognizing two equivalent tests instead of one.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This change is material neutral, as flooring products are tested in an identical manner using ASTM E648 or NFPA 253. The only difference is what is listed on the test report.

Does not degrade the effectiveness of the code

This change makes the code more complete and accurate, since ASTM E648 and NFPA 253 are the same test.

E648-14c Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

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F7938

Date Submitted	12/14/2018	**Section**	1	**Proponent**	Amanda Hickman
Chapter	35	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

#7919
#7928
#7936

Summary of Modification

This modification updates the reference standards NFPA 80 and NFPA 105 to the most current editions.

Rationale

The purpose of this modification is to update reference standards NFPA 80 and NFPA 105 to the current editions (2019).

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This modification updates reference standards to the current editions, thereby assisting code enforcement.

Impact to building and property owners relative to cost of compliance with code

This modification only updates reference standards to their current editions, therefore, there is no cost impact.

Impact to industry relative to the cost of compliance with code

This modification only updates reference standards to their current editions, therefore, there is no cost impact.

Impact to small business relative to the cost of compliance with code

This modification only updates reference standards to their current editions, therefore, there is no cost impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This modification updates the reference standards to their current editions. This includes periodic inspections for dampers, which will promote the health, safety and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This modification updates the reference standards to their current editions, which improves the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This modification does not discriminate against materials, products, etc. It only updates reference standards to their current edition.

Does not degrade the effectiveness of the code

No. This modification improves the effectiveness of the code by updating reference standards to their current edition.

Revise reference standards as follows:

NFPA

80-1319 Standard for Fire Doors and Other Opening Protectives

NFPA

105-1319 Standard for Smoke Door Assemblies and Other Opening Protectives

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NFPA has arranged the delivery of hard copies of standards NFPA 80-2019 and NFPA 105-2019.

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F8180

Date Submitted	12/15/2018	**Section**	35	**Proponent**	Robby Dawson
Chapter	35	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language Yes

Related Modifications

Summary of Modification

The utilization of up to date referenced standards is a recognized component of complete system of building and fire safety. These updated references allow for the utilization of newer technologies and safety equipment to protect lives and property.

Rationale

The utilization of up to date referenced standards is a recognized component of complete system of building and fire safety. These updated references allow for the utilization of newer technologies and safety equipment to protect lives and property.

The NFPA Standards, which are developed in a consensus process by subject matter experts and users, have long been recognized as an important part of the International Codes as well as other construction documents and some have been updated since the publication of the 2018 edition of the IBC.

Updating these standards takes advantage of improvements in formatting of the documents, technology developed since the last edition, and reduces emerging risks in the built environment.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will prevent local enforcers from utilizing outdated standards in the review and inspection of construction projects and will ease the burden of utilizing two different editions of these standards should a contractor desire to utilize the more up to date referenced standards.

Impact to building and property owners relative to cost of compliance with code

These standards must be complied with in accordance with the existing code provisions. This will allow them to use the most recent and up to date information available in the construct of properties.

Impact to industry relative to the cost of compliance with code

None identified.

Impact to small business relative to the cost of compliance with code

None identified.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

These are existing standards that have their connections with health, safety, and welfare previously established. There are no new base code provisions proposed with these standards.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Many of these NFPA Standards have undergone revisions to be better products through a revision and reformatting process driven by the code enforcement and engineering communities. The updated standards also take advantage of technology improvements since the last editions of the standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

It does not.

Does not degrade the effectiveness of the code

It does not.

1st Comment Period History

8180-A1

Proponent Bryan Holland **Submitted** 1/10/2019 **Attachments** Yes

Rationale

Major changes in the 2017 edition of NFPA 780 provide greater oversight and new understanding of lightning protection systems and lightning hazards. New definitions include ground loop conductor, integral lightning protection system, mast-type lightning protection system, rated impulse withstand voltage level (withstand voltage) (u w), smart structure, solar array, and solar panel. Other changes assist facility managers, installers, and AHJs: added requirements concerning physical on-site inspections of completed installations and periodic inspections or testing, updated figures illustrate air terminal protection for lower roof protection, new requirements cover test and connection points for concrete-encased electrodes to enable periodic maintenance and testing of the ground system, new bonding requirements address long horizontal metal bodies on roofs, new requirements pertain to ungrounded metal bodies, new Annexes cover technologies used in state-of-the-art systems: Annex J, Protection of Smart Structures; and Annex K, Guide to International Standards Dealing with the Selection of SPDs for Use on Photovoltaic (PV) Installations.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This comment will not have an fiscal impact on the local entity.

Impact to building and property owners relative to cost of compliance with code

This comment will not have a fiscal impact on a building or property owner.

Impact to industry relative to the cost of compliance with code

This comment will not have a fiscal impact on industry.

Impact to Small Business relative to the cost of compliance with code

None identified.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This comment will enhance the health, safety, and welfare of the general public by ensure mandatory or permitted lightning protection systems are installed to the most current nationally recognized consensus standard.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This comment will improve the code by referencing the most current edition of the NFPA 780.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This comment in no way discriminates against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This comment enhances the effectiveness of the code.

1st Comment Period History

F8180-G1

Proponent Robby Dawson **Submitted** 1/11/2019 **Attachments** No

Comment:

I agree with Mr. Holland's proposed modification and thank him for catching one of the referenced standards I overlooked.

1st Comment Period History

F8180-G2

Proponent Robby Dawson **Submitted** 1/18/2019 **Attachments** Yes

Comment:

See attached summary of standards updated.

NFPA (Standards not listed remain unchanged)

12 -~~15~~18: Standard on Carbon Dioxide Fire Extinguishing Systems

12A -~~15~~18: Standard on Halon 1301 Fire Extinguishing Systems

13 -~~16~~19: Standard for Installation of Sprinkler Systems

13D -~~16~~19: Standard for Installation of Sprinkler Systems in One-and Two-family Dwellings and Manufactured Homes

13R - ~~16~~19: Standard for Installation of Sprinkler Systems in Low Rise Residential Occupancies

14 - ~~16~~19: Standard for the Installation of Standpipe and Hose Systems

16 - ~~15~~19: Standard for the Installation of Foam-water and Foam-water Spray Systems

20 - ~~16~~19: Standard for the Installation of Stationary Pumps for Fire Protection

40 - ~~16~~19: Standard for the Storage and Handling of Cellulose Nitrate Film

72 - ~~16~~19: National Fire Alarm and Signaling Code

80 - ~~16~~19: Standard for Fire Doors and Other Opening Protectives

92 - ~~15~~18: Standard for Smoke Control Systems

105 - ~~13~~19: Standard for Smoke Door Assemblies and Other Opening Protectives

110 - ~~13~~19: Standard for Emergency and Standby Power Systems

111 - ~~13~~19: Standard for Stored Electrical Emergency Emergency and Standby Power Systems

211 - ~~16~~19: Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances

652 - ~~16~~19: Standard on the Fundamentals of Combustible Dust

750 - ~~15~~19: Standard on Water Mist Fire Protection Systems

2001 - ~~15~~18: Standard on Clean Agent Fire Extinguishing Systems

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I fully support the proposed modification to update the selected list of referenced NFPA codes and standards with the addition of:

NFPA 780 - ~~14~~ 17 Standard for the Installation of Lightning Protection Systems

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Florida Building Code Proposal

Supporting Information to Code Changes F8180 and F8204

This document summarizes the changes to the NFPA standards that are proposed to be updated to the newest editions in these two code change proposals. All standards not noted here or in the proposals are not included as the ICC references the most recent standards in the balance of the noted documents.

Each of these summaries is derived from the "*Origin and Development*" section of each of the individual documents which contains a complete history of all previous revisions of the standard, as well as the significant changes from the most recent editions that are covered in this summary. The link noted in each summary will provide access to the most recent and full document referenced.

If there are any further questions or concerns, please contact:

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NFPA Southeastern Regional Director
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NFPA 12-18: Standard on Carbon Dioxide Fire Extinguishing Equipment - The 2018 edition introduces a new requirement to conduct testing of integrated fire protection and life safety systems in accordance with NFPA 4. In addition, a new section on pipe hangers and supports and a new annex section on full discharge testing have also been added to more clearly explain the testing process. Finally, the equivalency statement was revised to use the standard text, which specifies that the authority having jurisdiction is responsible for approving an equivalent system, method, or device. www.nfpa.org/12

12A-18: Standard on Halon 1301 Fire Extinguishing Systems – The only change in the 2018 edition is in the annex chapter on nozzle and piping calculations (Annex H). It was revised to correct errors, comply with the *Manual of Style for NFPA Technical Committee Documents*, and clarify the details of the procedure. www.nfpa.org/12A

13 -19: Standard for Installation of Sprinkler Systems - The 2019 edition of NFPA 13 has undergone a complete reorganization to make the document more functional and easier to navigate. It is now fashioned in the order of how one would approach the design of a sprinkler system. Users will now find hazard classifications, water supplies, and underground piping at the beginning of the standard. Chapter 8 has been divided into several new chapters, breaking out general rules for sprinkler locations into one chapter and several other chapters specific to sprinkler technology. The storage chapters have also been reorganized by sprinkler technology and address ceiling-only design. Chapter 25 has been revised and now contains all the requirements for in-rack sprinklers.

Requirements for vertical pipe chases have been clarified as have requirements for electrical equipment rooms where sprinklers can be omitted. Additionally, new beam rules for residential sprinklers have been added and details provided.

Due to the extensive reorganization of the 2019 edition, new features have been added to help users locate requirements and identify sections with technical changes. The 2016–2019 Roadmap comparing the section numbers of the 2016 edition to the 2019 edition has been compiled and is located in the document after the index. It is provided for information only and should be used as a quick-reference locator. Technical changes from the last edition are also indicated and should be used as a guide. Shaded text identifies requirements that have been modified as a result of additions and deletions with the exception of tables and figures. New requirements are marked with the N symbol. www.nfpa.org/13

13D -19: Standard for Installation of Sprinkler Systems in One-and Two-family Dwellings and Manufactured Homes - The 2019 edition adds beam rules for sprinklers installed under and adjacent to beams (along with new figures), requirements for closets where ventless clothes dryers are installed, and requirements where pressure-reducing and pressure-regulating valves are installed. A section has been added to Chapter 12 to address inactive systems in structures left vacant for a period of time. Requirements for the use of well pumps as a water supply have been clarified. In addition, images have been added to clarify sprinkler location and clearances needed around fireplaces. www.nfpa.org/13D

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13R - 19: Standard for Installation of Sprinkler Systems in Low Rise Residential Occupancies - The 2019 edition adds a new definition for carport, as well as several new requirements that address where pipe and tube listed for light hazard can be used in an ordinary hazard application, beam rules for sprinklers installed under and adjacent to beams (along with new figures), waste and linen systems, installation of fuel-fired equipment, and obstructions in hallways. Chapter 9, Water Supplies, is reorganized, and the domestic demand tables are moved from the annex to the body of the standard, and values updated. In addition, new images clarifying sprinkler location and clearances needed around fireplaces are added. www.nfpa.org/13R

14 - 19: Standard for the Installation of Standpipe and Hose Systems - In the 2019 edition, the terminology has been made consistent throughout the document by changing the terms *outlet(s)* and *hose outlet(s)* to *hose connection(s)*, as this is the more appropriate term. The definitions for the terms *hose connection* and *hose valve* also have been revised to clarify what is meant by each term as used in the document. Definitions and requirements for *distance monitoring* and *automated inspection and testing* have been added because technology now allows for monitoring of certain conditions as well as inspecting and testing standpipe systems from a remote location.

A definition for *open parking garage* has been added along with a requirement that permits manual standpipes in open parking garages under a certain height. The signage for pressure requirements is no longer required when the pressure is 150 psi or less, as NFPA 13E requires a standard pressure of 150 psi unless a sign indicates more pressure is required. The maximum pressure permitted at any point in the system has been increased from 350 psi to 400 psi. Subsection 7.8.1 has been revised to clarify that the required pressure is to be calculated at the outlet of the hose valve. The hydraulic calculation procedures have been revised to clarify that additional standpipes should be calculated at the point of connection rather than at the topmost outlet.

Subsection 7.11.2 has been revised to delineate between a standpipe system main drain and individual standpipe drains. Revisions have been made to the required number of fire department connections due to the ease with which a single connection can be compromised. A new Chapter 13 on maritime standpipe and hose systems has been added. www.nfpa.org/14

16 - 19: Standard for the Installation of Foam-water and Foam-water Spray Systems - The 2019 edition of NFPA 16 was reorganized in a fashion consistent with that of the 2019 edition of NFPA 13 — to present information in the order in which it is needed when planning and designing a foam water sprinkler/spray system. Technical changes include the addition of requirements for working drawings using information from both NFPA 11 and NFPA 13 to provide a comprehensive list of information. Information about the type of foam concentrate piping was extracted from NFPA 11 to be consistent with that standard. Information was also extracted from NFPA 30 to address containment, drainage, and spill control. www.nfpa.org/16

20 - 19: Standard for the Installation of Stationary Pumps for Fire Protection - The 2019 edition of NFPA 20 is revised to recognize new technologies, including automated inspection and testing, distance monitoring, automated valves, and self-regulating variable speed fire pump units. Provisions are added to require that a single entity be responsible for acceptable fire pump unit performance. A new definition for *lowest permissible suction pressure* is added to provide a better understanding of the maximum available flow by connecting it to a suction pressure.

Requirements are added to clarify where manifolding of fire pump test piping is permitted, as well as where combining fire pump test piping with relief valve discharge piping is permitted. New definitions are added to differentiate between *standby power* and *alternate power* and to ensure proper application of these terms throughout the document. The term *very tall building* is defined and the requirements pertaining to these buildings are expanded, including those for automatic tank refill valves.

New requirements and annex material are added to help package designers through the evaluation of mass elastic systems. The requirements for hydraulic cranking systems are revised to distinguish between systems used as primary cranking systems and those used as secondary cranking systems.

Annex C is revised significantly to make data formatting more universal. www.nfpa.org/20

40 - 19: Standard for the Storage and Handling of Cellulose Nitrate Film - In the 2019 edition, the terms *standard roll* and *single- and double-roll containers* were replaced by terminology used by modern archivists. A new definition for *decomposition* was added, along with a new requirement for inspection and maintenance of portable fire extinguishers to comply with NFPA 10. Changes were made to the extended term storage vault requirements to allow for flexible storage configurations. Requirements for openings in, and exhaust capacities of, projection booths were

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revised to reflect modern practices and equipment, and a new requirement for temperature and humidity control was added. www.nfpa.org/40

72 - 19: National Fire Alarm and Signaling Code - The 2019 edition reflects a number of changes. The requirements for fire service access elevators and occupant evacuation elevators (OEE) were completely revised to coordinate with changes made in ASME A17.1/CSA B44. The requirements for occupant evacuation operation (OEO) are revised extensively. Annex text is added for clarification, as is Figure A.21.6, Simplified Occupant Evacuation Operation (OEO) (elevator system interface with the building fire alarm system based on ASME A17.1, Section 2.27.11; and *NFPA 72*, Section 21.6). In addition to the requirements for area of refuge (area of rescue assistance), Chapter 24 is revised to include requirements for stairway communications systems, elevator landing communications systems, and occupant evacuation elevator lobby communications systems.

A review was accomplished and revisions made to ensure alignment of *NFPA 72* with the *Manual of Style for NFPA Technical Committee Documents*. These editorial revisions include the breakout of paragraphs with multiple requirements into individually numbered paragraphs for each requirement and the minimization of use of exceptions. For many years, when codes required visual (or visible) notification in addition to audible notification, strobe lights meeting the requirements of Chapter 18 were used. With newer LED products that can be used for fire alarm, the terms *strobe*, *light*, and *visible* are essentially changed to *visual notification appliance*. The terms *speaker* and *high power speaker array (HPSA)* are changed to *loudspeaker* and *high power loudspeaker array (HPLA)* for consistency.

Perhaps the most significant change to the Code pertains to carbon monoxide. In August 2015, the Standards Council voted to relocate material that is in NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, to various chapters of *NFPA 72*. These requirements are essentially incorporated into Chapter 17 for carbon monoxide detectors; Chapter 14 for installation, testing, and maintenance; Chapter 29 for carbon monoxide alarms; and new Annex H. Chapter 29 is greatly expanded, and a significant amount of annex text has been added for explanation. NFPA 720 is to be withdrawn as the requirements are moved to *NFPA 72*.

Chapter 14, Inspection, Testing, and Maintenance, is greatly modified to incorporate valve-regulated lead-acid (VRLA) batteries. The inspection and testing requirements are revised in Tables 14.3.1 and 14.4.3.2. This also expands the annex language to address use and testing of these batteries. Several new terms are introduced, and these are defined in Chapter 3. www.nfpa.org/72

80 - 19: Standard for Fire Doors and Other Opening Protectives - The 2019 edition includes new definitions in Chapter 3 for *inspection mark* and *field label* to assist in the application of inspection, testing, and maintenance provisions in Chapter 5. Chapter 4 contains updated provisions for job site preparation of fire doors for fire pins. Subsection 4.8.4 has been updated with new provisions for measuring clearance under the bottom of fire doors and with a new requirement addressing bottom clearance with the presence of latching hardware devices. Chapter 5 has been updated to include fire protective curtain assemblies in its application and a new section that addresses inspection marks. New subsection 19.2.2 requires damper manufacturer's installation and maintenance instructions be maintained on site for new damper installations. The detailed damper installation criteria from Chapter 19 have been deleted and left with reliance on the damper manufacturer's installation instructions and the damper listing. Chapter 19 also continues to update the requirements for the inspection, testing, and maintenance of fire and combination fire/smoke dampers with the addition of new 19.5.2.3.3 for a remote inspection method. A new 19.5.1.3 clarifies application of inspection requirements for single inaccessible dampers.

Annex A contains new and revised figures for typical steel door frame installations. Globally, ANSI UL 10B, *Fire Tests of Door Assemblies*, and ANSI UL 10C, *Standard for Positive Pressure Fire Tests of Door Assemblies*, have been added as equivalent standards to NFPA 252. Editorial updates have been made to Chapter 4 and Chapter 5 to clean up duplicate language and relocate text to the appropriate sections. Referenced publications and extracted sections have been updated as needed. www.nfpa.org/80

92 - 18: Standard for Smoke Control Systems - New to the 2018 edition of NFPA 92 is the addition of requirements regarding the verification of dedicated smoke control equipment through use of the weekly self-test function. A new annex on tenability was added to provide guidelines for designers to assess tenable conditions in spaces protected by smoke control systems, in connected spaces, and of means of egress elements during the operation of a smoke control system. www.nfpa.org/92

105 - 19: Standard for Smoke Door Assemblies and Other Opening Protectives - Changes for the 2019 edition of NFPA 105 focus primarily on the provisions for smoke dampers. New 7.3.1.2 requires smoke damper

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manufacturer's installation and maintenance instructions be maintained on site for new smoke damper installations. Chapter 7 also continues to update the requirements for the inspection, testing, and maintenance of smoke dampers with the addition of new 7.6.3.3 on a remote inspection method. A new 7.6.2.3 clarifies application of inspection requirements for single inaccessible dampers. Section 7.5 contains new requirements to further clarify and update the process for smoke damper acceptance testing. A new opening protective is addressed by new Chapter 9, which applies to smoke-protective curtain assemblies for hoistways. A new definition is added to Chapter 3 to describe a smoke-protective curtain assembly for hoistways. Referenced publications and extracted sections have been updated as needed. www.nfpa.org/105

110 - 19: Standard for Emergency and Standby Power Systems - For the 2019 edition, several existing requirements have been clarified to assist users with the proper application. Clarifications include the location and access to the remote emergency stop switch, testing of fuel in accordance with the manufacturer's recommendations in lieu of an ASTM standard, and battery charger specifications. www.nfpa.org/110

111 - 19: Standard for Stored Electrical Emergency and Standby Power Systems - In the 2019 edition, Table 4.2.2 has been revised to cover the interruption time without reference to specific SEPSS types. www.nfpa.org/111

211 - 19: Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances - The 2019 edition includes updated references such as product listings. In addition, installation of decorative shrouds at the termination of a factory-built chimney are permitted per the standard requirements. www.nfpa.org/211

652 - 19: Standard on the Fundamentals of Combustible Dust - The 2019 edition of NFPA 652 contains the following changes: NFPA 652 is intended to be the fundamentals document for combustible dust. As such, definitions that are considered fundamental to the topic of combustible dust reside in NFPA 652 and be extracted into the industry and commodity-specific standards. This ensures consistency in documents dealing with dust. Changes to this edition reflect this, and several definitions are added from industry and commodity-specific documents that also are considered fundamental to combustible dust.

Provisions were added to designate the requirements that are meant to be retroactive. Management system requirements, such as housekeeping, personal protective equipment (PPE), and hot work are now in Chapter 8, Management Systems.

Material was added to Chapter 5 that helps the user evaluate the requirements for mixtures of types of combustible dust, such as a mixture containing metal dust and agricultural dust.

Changes were made to the deadlines are included for the completion of dust hazard analysis (DHA) for existing processes and facility compartments. The deadline for completion of a DHA is now September 7, 2020. This aligns with industry and commodity-specific dust standards. NFPA 652 now also requires that the DHA be reviewed and updated every 5 years.

Chapter 9, Hazard Management: Mitigation and Prevention, was expanded to include requirements on equipment design and operation. This includes air material separators (AMS), air moving devices (AMDs), duct systems, sight glasses, abort gates and dampers, bulk storage enclosures, size reduction equipment, pressure protection systems, material feeding devices, bucket elevators, enclosed conveyors, mixers and blenders, and dryers. Requirements for fans for continuous dust control are also added. Changes are made to the requirements for equipment isolation to remove the exemption for small diameter ductwork. Note that this is consistent with the current requirements in NFPA 654.

The committee modified the material on electrostatic discharges to provide clarity to the user regarding conductive equipment, bonding and grounding, flexible connectors, particulate transport rates, grounding of personnel, flexible intermediate bulk containers (FIBCs), and rigid intermediate bulk containers (RIBCs). www.nfpa.org/652

750 - 19: Standard on Water Mist Fire Protection Systems - The 2019 edition of NFPA 750 contains updates that clarify the definitions of a gridded water mist system and twin-fluid system, which devices can be used as automatic means, which components can be used as provisions for cleaning, and the requirements for pressure-indicating devices used on a common manifold system. Further updates clarify that a listed system requires that any mixed components or systems have been tested together and expand requirements to include configurations allowed in current listed solutions. New sections have been added specifying design, testing, and installation of preaction water mist systems. Another section has been added to prevent debris and contaminants from entering a water mist system

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by requiring a strainer or filter after the fire department connection (FDC). It also clarifies the location of the FDC on a low-pressure water mist system. Throughout the standard, the terms *pressure container* and *pressurized container* have been replaced with the newly defined term *pressure vessel*, and the phrase *safety device to release excess pressure* has been replaced with *pressure relief device*. These changes were made to maintain consistency with industry practices and terminology. This edition also incorporates revisions that update referenced documents, extracts, and formatting to comply with the *Manual of Style for NFPA Technical Committee Documents*. www.nfpa.org/750

780 – 17: Standard for the Installation of Lightning Protection Systems - For the 2017 edition, new requirements have been added relative to physical on-site inspection of the completed installation and for periodic inspections or testing for compliance to this standard per the authority having jurisdiction. New definitions have been added for the following terms: *ground loop conductor*, *integral lightning protection system*, *mast-type lightning protection system*, *rated impulse withstand voltage level (withstand voltage) (UW)*, *smart structure*, *solar array*, and *solar panel*. Those definitions add clarity to the terms as used in the standard.

Several figures illustrating air terminal protection for lower roof protection have been updated. New requirements have been established for test and connection points for concrete-encased electrodes to enable periodic maintenance and testing of the ground system. Zero property line conditions have been re-evaluated and revised. New bonding requirements have been added for long horizontal metal bodies on roofs. The Committee revised many requirements pertaining to ungrounded metal bodies, removing the term isolated (ungrounded) for consistency. Section 5.3 pertaining to Facilities That Handle or Process Combustible or Explosive Dust has been updated, providing specific reference to NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*; NFPA 122, *Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities*; and NFPA 664, *Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities*. Section 5.9 provides new criteria for installations on fabric structures. Chapter 7, Protection for Structures Containing Flammable Vapors, Flammable Gases, or Liquids That Can Give Off Flammable Vapors was rewritten. Sections in Chapter 8, Protection of Structures Housing Explosive Materials, that pertain to single or multiple masts, railroad tracks, installation of air terminals on earth-covered magazines, wharves, and piers for explosives operations and cranes were revised. Chapter 12, Protection for Solar Arrays, was revised to provide more specific criteria.

Two new annexes, Annex J, Protection of Smart Structures, and Annex K, Guide to International Standards Dealing with the Selection of SPDs for Use on Photovoltaic (PV) Installations, have been added to the 2017 edition. Annex L, Lightning Risk Assessment, has been revised to provide greater clarity and correlation of requirements with other lightning protection standards. www.nfpa.org/780

***NOTE**: This is the suggested alternative offered by Bryan Holland to the original proposal.*

2001 - 18: Standard on Clean Agent Fire Extinguishing Systems - For the 2018 edition, the chapter on inspection, testing, maintenance, and training was completely reorganized to improve usability of the standard and to comply with the *Manual of Style for NFPA Technical Committee Documents*. As part of this revision, the content was split into two distinct chapters: Chapter 7, Approval of Installations, and Chapter 8, Inspection, Servicing, Testing, Maintenance, and Training. Definitions of *inspection*, *maintenance*, and *service* were added, as well as a requirement for integrated fire protection and life safety systems to be tested in accordance with NFPA 4. In addition, the standard now requires an egress time study for all clean agent systems, not just those where the design concentration is greater than the NOAEL. A definition of *abort switch* was added, and the definition of *clean agent* was revised. A requirement to install dirt traps at the end of each pipe run was added. The requirements for pipe and fittings were reviewed and updated in accordance with the latest reference standards. A new section on pipe hangers and supports was added. New requirements regarding releasing panels were added. www.nfpa.org/2001

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8180_G2_General_FL Building Code Change F8180 F8204 Supporting

F8276

Date Submitted	12/14/2018	**Section**	102.2.8	**Proponent**	Paul Coats
Chapter	Appendix D	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

7522, 7553, 7826, 8265, 8267, 8269, 8270, 8271, 8273, 8275

Summary of Modification

This is a correlation change with other modifications that reorganize the heavy timber provisions. It does not change requirements but improves terminology to distinguish between the use of the terms "heavy timber" and "Type IV construction."

Rationale

This modification was approved by the ICC committee and membership and appears in the 2018 edition of the International Building Code. This code change is related a reorganization of Type IV provisions in Section 602.4 and the heavy timber provisions in section 2304.11. The goal of this change (and similar changes to heavy timber terminology in other chapters) is to use the term "Type IV" or "Section 602.4" when the provisions are referring to the type of construction for the building, and "heavy timber complying with Section 2304.11" when the provisions are referring to a heavy timber element located in a building of any construction type. This and related changes are not intended to make technical changes to the code but rather to make the current requirements easier to apply.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make code application easier.

Impact to building and property owners relative to cost of compliance with code

No cost-related impact.

Impact to industry relative to the cost of compliance with code

No cost-related impact.

Impact to small business relative to the cost of compliance with code

No cost-related impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make code application easier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by making its application easier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code.

1.

1. D102.2.8 Permanent canopies.

Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. 1.The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~ heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.

   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.

2. 2.Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E84 or UL 723 in the form intended for use.
3. 3.The canopy shall have at least one long side open.
4. 4.The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. 5.The *fire resistance* of *exterior walls* shall not be reduced.

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G 180-15

406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smokedeveloped index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section ~~602.4.6~~2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	$1^1/_{2^u}$	$1^{b,c}$	$1^{b,c}$	0^c	$1^{b,c}$	0	HT	$1^{b,c}$	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

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1. *Fire-retardant-treated wood* shall be permitted in:
   1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
   1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
   Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, ~~Type IV~~heavy timber construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV~~heavy timber construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of ~~Type IV~~heavy timber construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of ~~Type IV~~heavy timber construction in accordance with Section ~~602.4~~2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:
1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

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1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest *story*, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV size~~heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
   Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construciton, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.
The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction
Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 180-15 : 406.7.2-RICHARDSON5276

G 180-15

Committee Action: Approved as Submitted

Committee Reason: This is a companion piece to G179-15. G179 reorganizes the heavy timber provisions. This change provides corrections to the various new section numbers resulting from G179-15.

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F7291 242

Date Submitted	11/16/2018	**Section**	402.6	**Proponent**	Ann Russo1
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments **No** **Alternate Language** **No**

Related Modifications

FEBC Chapter 4- 403.13 Carbon monoxide alarms
FEBC Chapter 8-804.4.4 Carbon monoxide alarms.
FEBC Chapter 11 - 1105.1 Carbon monoxide alarms in existing portions of a building

Summary of Modification

FBC Section 908.8 requires Carbon Monoxide Alarms in Additions, this will place the proper reference in the FEBC.

Rationale

FBC Section 908.8 requires Carbon Monoxide Alarms in Additions, this will place the proper reference in the FEBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is already a code requirement

Impact to industry relative to the cost of compliance with code

No impact to industry as this is already a code requirement

Impact to small business relative to the cost of compliance with code

No impact to small business as this is already a code requirement

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by adding a missing reference to Carbon Monoxide Alarms in FEBC.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by adding a missing reference to Carbon Monoxide Alarms in FEBC.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems of construction, this is a current code requirement that does not limit materials, products, methods, or systems of construction that comply with this requirement.

Does not degrade the effectiveness of the code

Increases the effectiveness of code by addition a missing reference to providing Carbon Monoxide Alarms in FEBC

New section 402.6

402.6 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 908.8 of the Florida Building Code or Section R315 of the Florida Residential Code, as applicable.

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F7355

Date Submitted	11/20/2018	**Section**	402.6	**Proponent**	Bryan Holland
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds CO alarm requirement to the prescriptive compliance method on the FBC-Existing Building.

Rationale

This proposed modification adds requirements for CO alarms in the Florida Existing Building Code to match those already required in the FBC-R and FFPC. This will harmonize the FEBC with the 2018 IEBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by ensuring CO alarms get installed when dealing with exiting building alterations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

1st Comment Period History

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

F7355-G1

Comment:

Carbon monoxide provisions of the 2017 FBC are consistent with section 553.885 FS.

402.6 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with the Florida Fire Prevention Code or Section R315 of the Florida Building Code-Residential, as applicable.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.

2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

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F7357

Date Submitted	11/20/2018	**Section**	403.13	**Proponent**	Bryan Holland
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

7355

Summary of Modification

This proposed modification adds CO alarm requirement to the prescriptive compliance method on the FBC-Existing Building.

Rationale

This proposed modification adds requirements for CO alarms in the Florida Existing Building Code to match those already required in the FBC-R and FFPC. This will harmonize the FEBC with the 2018 IEBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

1st Comment Period History

F7357-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:

Carbon monoxide provisions of the 2017 FBC are consistent with section 553.885 FS.

403.13 Carbon monoxide alarms. Carbon monoxide alarms shall be provided to protect sleeping units and dwelling units in Group I-1, I-2, I-4 and R occupancies in accordance with the Florida Fire Prevention Code or Section R315 of the Florida Building Code-Residential, as applicable.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.

2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

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F7617

Date Submitted	11/30/2018	**Section**	402.6	**Proponent**	Ann Russo11
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

FEBC Ch 4-403.13 Carbon monoxide alarms
FEBC Ch 8-804.4.4 Carbon monoxide alarms
FEBC Ch 11-1105.1 Carbon monoxide alarms in existing portions of a building

Summary of Modification

FBC Section 908.8 requires Carbon monoxide alarms in Additions, this will place the proper reference in the FEBC

Rationale

Section 908.8 contains requirements for installing carbon monoxide alarms in existing occupancies; however, those requirements are currently not reflected in the FEBC.
This proposal corrects this oversight with the new proposed code sections.
This proposal will provide consistency between the FBC, FRC and the FEBC with regard to the installation and requirements of carbon monoxide alarms.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
no impact to local entity as this is already a code requirement.

Impact to building and property owners relative to cost of compliance with code
no impact to building and property as this is already a code requirement.

Impact to industry relative to the cost of compliance with code
no impact to industry as this is already a code requirement.

Impact to small business relative to the cost of compliance with code
no impact to small business as this is already a code requirement.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Improves the health, safety, and welfare of the general public by adding a missing reference to carbon monoxide alarms in the FEBC.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Improves the code by adding a missing reference to carbon monoxide alarms in the FEBC.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
Does not discriminate against materials, products, methods, or systems of construction, this is a current code requirement that does not limit the materials, products, methods, or systems of construction that comply with this requirement.

Does not degrade the effectiveness of the code
Increases the effectiveness of the code by adding a missing reference to carbon monoxide alarms in the FEBC.

1st Comment Period History

F7617-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:
Carbon monoxide provisions of the 2017 FBC are consistent with section 553.885 FS.

402.6 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 908.8 of the Florida Building Code or Section R315 of the Florida Residential Code, as applicable.

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F8043

Date Submitted	12/13/2018	**Section**	406.2	**Proponent**	Harold Barrineau
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Sections 406.3, 702.4, 702.5

Summary of Modification

406.2 Replacement window opening control devices. 406.3 Replacement window emergency escape and rescue openings. 702.4 Window opening control devices on replacement windows. 702.5 Replacement window emergency escape and rescue openings.

Rationale

The intent of this proposal is for consistent terminology in the FBC Existing between Chapter 4 and 7 when dealing with replacement windows. The added language also clarifies that this applies to windows in FBC, Residentialdwellings.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity relative to enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This proposal will not increase the cost of construction because it is simply coordinating current options in the IEBC.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal will not increase the cost of construction because it is simply coordinating current options in the IEBC.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal will not increase the cost of construction because it is simply coordinating current options in the IEBC.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety and welfare of the general public with clarification of current options.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Strengthens or improves the code by coordinating current options in the FBC, Existing.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Revise as follows:

406.2 Replacement window opening control devices.

In Group R-2 or R-3 buildings containing dwelling units, and one-and two-family dwellings and townhouses regulated by the Florida Building Code, Residential, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1.The window is operable;

2.The window replacement includes replacement of the sash and the frame;

3.~~The top of the sill of the window opening is at a height less than 36 inches ()915 mm) above the finished floor.~~One of the following applies:

3.1 In Group R-2 or R-3 building containing dwelling units, the top of the sill of the window

opening is at a height less than 36 inches (915 mm) above the finished floor; or

3.2 In one-and two-family dwellings and townhouses regulated by the Florida Building Code, Residential, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;

4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and

5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm). The window opening control device, after operation to release the control device allowing the window

to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1029.2 of the International Building Code.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.

2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

406.3 Replacement window emergency escape and rescue openings.

Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one-and two-family dwellings and townhouses regulated by the Florida Building Code, Residential, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the Florida Building Code, Building and Sections R310.2.1 and R310.2.3 of the Florida Building Code, Residential provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

2. The replacement of the window is not part of a change of occupancy.

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Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

702.4 Window opening control devices on replacement windows.

In Group R-2 or R-3 buildings containing dwelling units and one-and two-family dwellings and townhouses regulated by the Florida Building Code, Residential, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;

2. The window replacement includes replacement of the sash and the frame;

3. One of the following applies:
   3.1 In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor; or
   3.2 In one-and two-family dwellings and town-houses regulated by the Florida Building Code, Residential, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;

4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and

5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the Florida Building Code, Building.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.

2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

702.5 ~~Emergency~~ Replacement window emergency escape and rescue openings.

Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one-and two-family dwellings and townhouses regulated by the Florida Building Code, Residential, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the Florida Building Code, Building and Sections R310.21 and R310.2.3 of the Florida Building Code, Residential accordingly, provided the replacement window meets the following conditions:

1.The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

2. The replacement of the window is not part of a change of occupancy.

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Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

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F8049

Date Submitted	12/13/2018	**Section**	406.2	**Proponent**	Joseph Belcher for FHBA
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

406.3, 702.4, and 702.5

Summary of Modification

Coordinates replacement window provisions of the FBC-EB

Rationale

(Note: Reason is as provided by original ICC proponent. JDB)

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“Reason: This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx. The intent of this proposal is for consistent terminology in the IEBC between Chapter 4 and 7 when dealing with replacement windows. The added language also clarifies that this applies to windows in IRC dwellings.”

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact the change coordinates and clarifies the provisions for replacement windows.

Impact to building and property owners relative to cost of compliance with code

No impact the change coordinates and clarifies the provisions for replacement windows.

Impact to industry relative to the cost of compliance with code

No impact the change coordinates and clarifies the provisions for replacement windows.

Impact to small business relative to the cost of compliance with code

No impact the change coordinates and clarifies the provisions for replacement windows.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by coordinating and clarifying the provisions for replacement windows in various sections.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by coordinating and clarifying the provisions for replacement windows in various sections.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

Revise as follows:

406.2Replacement window opening control devices. In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the *Florida Building Code-Residential*, window opening control devices complying with ASTMF 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacementwindow:

1. The window isoperable;

2. The window replacement includes replacement of the sash and theframe;

3. ~~The~~ One of the followingapplies:

   3.1. In Group R-2 or R-3 building containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor;or

   3.2. In one- and two-family dwellings and townhouses regulated by the *Florida Building Code-Residential*, the top of the sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;

4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position;and

5. The vertical distance from the top of the sill oft he window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the *Florida Building Code-Building*.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

406.3 Replacement window emergency escape and rescue openings. Where windows are required to provide *emergency escape* and *rescue openings* in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the *Florida Building Code-Residential*, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the Florida Building Code-Building and Sections R310.2.1,

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310.2.2 and R310.2.3 of the *Florida Building Code-Residential* accordingly provided the replacement window meets the following conditions:

1. The replacement window is he manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

702.4 Window opening control devices on replacement windows. In Group R-2 or R-3buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the *Florida Building Code-Residential*, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;

2. The window replacement includes replacement of the sash and the frame;

3. One of the following applies:

   3.1. In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor; or

   3.2. In one-and-two-family dwellings and town-houses regulated by the *Florida Building Code-Residential*, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;

4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and

5. Theverticaldistancefrom the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the *Florida Building Code-Building*.

Exceptions:

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1. Operable windows where the top of the sill of the window opening is located more than75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.
2. Operable windows with openings that arep rovided with window fall prevention devices that comply with ASTM F2090.

702.5 ~~Emergency~~ Replacement window emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the *Florida Building Code-Residential*, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the *Florida Building Code-Building* and Sections R310.2.1, R310.2.2 and R310.2.3 of the *Florida Building Code-Residential* accordingly, provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide *emergency escape* and *rescue openings*.

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Date Submitted	12/14/2018	**Section**	301.1	**Proponent**	Ann Russo4
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

301.2
301.1 301.1.1 301.1.2 301.1.3
401.1 401.1.1 401.2.2
404
501.1 501.1.1 502
1401.1 1401.1.1 1401.2.4

Summary of Modification

The purpose of this modification to remove the topic of repair from the three compliance methods and to move repair into one standalone chapter

Rationale

The purpose of this code change is to remove the topic of repair from the three compliance methods and to move repair into one standalone chapter.
The topic of repairs is fairly simple but the way the three methods handle the topic very differently:

- Prescriptive method- Specific requirements on structural repairs only, general statement on other topics with code official discretion on 'dangerous' situations
- Work area method- Specific requirements for structural (identical to prescriptive method), building materials, fire protection, accessibility, mechanical, plumbing, and electrical.
- Performance method- General requirements only and reference to the FBC for thresholds

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is already a code requirement

Impact to industry relative to the cost of compliance with code

No impact to industry as this is already a code requirement

Impact to small business relative to the cost of compliance with code

No impact to small businesses as this is already a code requirement

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by moving Repairs to a stand alone chapter

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by moving Repairs to a stand alone chapter. Having a standalone chapter for repairs will make the code more clear.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against material, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit material, products, methods, or systems of construction

Does not degrade the effectiveness of the code

improves the effectiveness of the code. This modification will make the repair provisions more consistent for each method. Repairs do not require several different methods of compliance. Having a standalone chapter for repairs will make the code more clear.

Relocate Chapter 6 as

follows: 6 4 REPAIRS
(Renumber Subsequent sections in this Chapter) (Renumber Chapters 4 and 5)

Revise as follows:

SECTION 301 ADMINIS TRATION

General. The *repair*, *alteration*, *change of occupancy*, *addition* or relocation of all *existing buildings* shall comply with Section 301.2 or 301.3, asapplicable.

Repairs Repairs shall comply with the requirements of Chapter4.

301.1301.3 ~~General~~ Alteration, change of occupancy, addition or relocation. The ~~repair,~~ *alteration*, *change of occupancy*, *addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections ~~301.1.1~~ 301.3.1 through ~~301.1.3~~ 301.3.3 as selected by the applicant. Sections ~~301.1.1~~ 301.3.1 through ~~301.1.3~~ 301.3.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic forceresisting system of an *existing building* subject to ~~repair,~~ *alteration*, *change of occupancy*, *addition* or relocation of *existing buildings,* the seismic evaluation and design shall be based on Section ~~301.1.4~~ 301.3.4 regardless of which compliance method is used.

Exception: Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the *alteration* shall comply with the *Florida Building Code. Alterations* of *existing buildings* in *flood hazard areas* shall comply with Section 701.3. This exception shall not apply to alterations that constitute substantial improvement in flood hazard areas which shall comply with Section 701.3. This exception shall not apply to the structural provisions of Chapter 4 or to the structural provisions of Sections 7047, 807, and 907.

301.1.1301.3.1 Prescriptive compliance method. ~~Repairs, alterations~~

Alterations, *additions* and *changes of occupancy* complying with Chapter 45 of this code in buildings complying with the *Florida Fire Code* shall be considered in compliance with the provisions of this code.

301.1.2301.3.2 Work area compliance method. ~~Repairs, alterations~~ *Alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Chapters ~~5~~ 6 through 13 of this code shall be considered in compliance with the provisions of this code.*

301.1.3301.3.3 Performance compliance method. ~~Repairs, alterations~~ *Alterations*, *additions*, changes in occupancy and relocated buildings complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.

(Renumber subsequent sections)

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401.1 Scope. The provisions of this chapter shall control the *alteration*~~, repair~~, *addition* and *change of occupancy* or relocation of *existing buildings* and structures, including *historic buildings* and structures as referenced in Section ~~301.1.1~~ 301.3.1.

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

401.1.1 Compliance with other methods. *Alterations*~~, repairs~~, *additions* and *changes of occupancy* to or relocation of, *existing buildings* and structures shall comply with the provisions of this chapter or with one of the methods provided in Section ~~301.1~~ 301.3.

401.2.2 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for ~~repairs and~~ *alterations*, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

Delete without substitution:

SECTIO
~~N 404~~
~~REPAIRS~~

~~404.1 General.~~ ~~Buildings and structures, and parts thereof, shall be repaired in compliance with Sections 401.2 and 404. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to therequirements for alterations in this chapter. Routine maintenance required by Section 401.2, ordinary repairs exempt from permitinaccordance withSection105.2,andabatementofwearduetonormalserviceconditions shall not be subject to the requirements for repairs in thissection.~~

~~[BS] 404.2 Substantial structural damage to vertical elements of the lateral force-resisting system.~~ ~~A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 404.2.1 through 404.2.3.~~

~~Exceptions:~~

~~1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.~~

~~One-andtwo-familydwellingsneednotbeevaluated orrehabilitatedforloadcombinations that include earthquake effects.~~

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[BS] 404.2.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for wind and earthquake loads.
Wind loads for this evaluation shall be those prescribed in Section 1609 of the Florida Building Code. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 of the Florida Building Code. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake evaluation requirement.

[BS] 404.2.2 Extent of repair for compliant buildings. If the evaluation establishes compliance of the predamage building in accordance with Section 404.2.1, then repairs shall be permitted that restore the building to its predamage state.

[BS] 404.2.3 Extent of repair for noncompliant buildings. If the evaluation does not establish compliance of the predamage building in accordance with Section 404.2.1, then the building shall be rehabilitated to comply with applicable provisions of the Florida Building Code for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by the Florida Building Code. Earthquake loads for this rehabilitation design shall be those required for the design of the predamage building, but not less than 75 percent of those prescribed in Section 1613 of the FLorida Building Code. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of
the International Building Code for new buildings of similar structure, purpose and location. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake rehabilitation requirement.

[BS] 404.3 Substantial structural damage to gravity loadcarrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions of the Florida Building Code for dead and live loads. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads approved prior to the damage. If the approved live load is less than that required by Section 1607 of the Florida Building Code, the area designed for the nonconforming live load shall be posted with placards
of approved design indicating the approved live load. Nondamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of

the Florida Building Code for new buildings of similar structure, purpose and location.

[BS] 404.3.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 404.2.1 and, if noncompliant, rehabilitated in accordance with Section404.2.3.

Exceptions:

One-andtwo-familydwellingsneednotbeevaluated orrehabilitatedforloadcombinations that include earthquake effects.

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2. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.

[BS] 404.4 Less than substantial structural damage. For damage less than substantial structural damage, repairs shall be allowed that restore the building to its predamage state. New structural members and connections used for this repair shall comply with the detailing provisions of

the International Building Code for new buildings of similar structure, purpose and location.

[BS]404.5Floodhazardareas. Forbuildingsandstructuresinfloodhazardareasestablishedin Section 1612.3 of the International Building Code, or Section R322 of the Florida Residential Code, as applicable, any repair that constitutes substantial improvement or repair of substantial damage of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flooddesign.

For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, or Section R322 of the Florida Residential Code, as applicable, any repairs that do not constitute substantial improvement or repair of substantial damage of the existing structure are not required to comply with the flood design requirements for new construction.

Revise as follows:

501.1 Scope. The provisions of this chapter shall be used in conjunction with Chapters 6 7 through 13 and shall apply to the *alteration*, repair, *addition* and *change of occupancy* of existing structures, including historic and moved structures, as referenced in Section 301.1.2. The work performed on an *existing building* shall be classified in accordance with this chapter.

501.1.1 Compliance with other alternatives. *Alterations*, repairs, *additions* and *changes of occupancy* to existing structures shallcomply with the provisions of Chapters 6 7 through 13 or with one of the alternatives provided in Section 301.1.

Delete without substitution:

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502
REP
AIRS

Scope. Repairs, as defined in Chapter 2, include the patching or restoration or replacement of damagedmaterials,elements,equipmentorfixturesforthepurposeofmaintainingsuchcomponentsin good or sound condition with respect to existing loads or performancerequirements.

Application. Repairs shall comply with the provisions of Chapter6.

502.3 Related work. Work on nondamaged components that is necessary for the required repair of damagedcomponentsshallbeconsideredpartoftherepairandshallnotbesubjecttotheprovisionsof Chapter 7, 8, 9, 10 or 11.

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Revise as follows:

1401.1 Scope. The provisions of this chapter shall apply to the *alteration*~~, repair~~, *addition* and *change of occupancy* of existing structures, including historic and moved structures, as referenced in **Section ~~301.1.3~~ 301.3.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in *existing buildings* while** permitting ~~repair~~, *alteration*, *addition* and *change of occupancy* without requiring full compliance with Chapters ~~5~~ 6 through 13, except where compliance with other provisions of this code is specifically required in this chapter.

1401.1.1 Compliance with other methods. *Alterations,* ~~repairs~~*additions, and changes of occupancy* to existing structures shall comply with the provisions of this chapter or with one of the methods provided in Section ~~301.1~~ 301.3.

1401.2.4 Alterations and repairs. An *existing building* or portion thereof that does not comply with the requirements of this code for new construction shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the *alteration* or *repair*, the current level of safety or sanitation is to be reduced, the portion altered or ~~repaired~~ shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33 of the *Florida Building Code*.

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F8225

Date Submitted	12/14/2018	**Section**	401.2.1	**Proponent**	Ann Russo4
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

401.2.2
602.106.2.2

Summary of Modification

Deletes "Existing [Building} Materials" and "New and replacement Material sections from Chapter 4 ad 6 which have been inserted in Chapter 3

Rationale

This modification deletes the "Existing [Building] Materials" and "New and Replacement Materials" sections from Chapters 4 and 6 because they are already inserted in chapter 3. The content in
Chapter 3 applies to all methods in the FEBC so deleting these sections in the other method chapters reduces redundancy.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is already a code requirement

Impact to industry relative to the cost of compliance with code

No impact to industry as this is already a code requirement

Impact to small business relative to the cost of compliance with code

No impact to small businesses as this is already a code requirement

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by removing wording that already is in Chapter 3

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by removing wording that already is in Chapter 3

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against material, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit material, products, methods, or systems of construction

Does not degrade the effectiveness of the code

Increase the effectiveness of the code by removing wording that already is in Chapter 3

Delete without substitution:

~~**401.2.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.~~

~~**401.2.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

602.1 Existing building materials. ~~Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the code official to render the building or structure unsafe or dangerous as defined in Chapter 2.~~ **602.2 602.1 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no dangerous or unsafe condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

Exception: Repairs to a historic building shall be permitted using original or like materials. Materials shall comply with Sections 602.2, 602.3 and 602.4.

~~602.3~~**602.2 Glazing in hazardous locations.** Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the Florida Building Code, Building or Florida Building Code, Residential as applicable.

Exception: Glass block walls, louvered windows, and jalousies repaired with like materials.

~~602.4~~**602.3 Replacement.** For repairs in an historic building, replacement or partial replacement of existing or missing features features hat match the original in configuration, height, size and original methods of construction shall be permitted.

Exception: Glazing in hazardous locations shall comply with Section ~~602.3~~602.2.

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F8231

Date Submitted	12/14/2018	**Section**	401.2	**Proponent**	Ann Russo4
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

401.2.1 401.2.2 401.2.3
403.1
404.1
602.1 602.2

Summary of Modification

Removes provisions from Sections 401.2,401.2.2,401.2.3,602.1 & 602.2 that wer already moved to Chapter 3 last cycle

Rationale

The modification removes provisions that were already moved to Chapter 3 in the last cycle. When they were moved, however, the remaining duplicate provisions addressed by this proposal could not be deleted because of Group assignments.
Sections 401.2.1, 401.2.2, 602.1, and 602.2 are now in Sections 302.3 and 302.4. Section 401.2.3 is now in Sections 301.1.4.1 and 301.1.4.2.
If 401.2.1 - 401.2.3 are deleted as proposed, the balance of 401.2 can be deleted as well.
Section 403.1 is revised accordingly to cite the existing sections that cover new and existing materials.
In Section 404.1, the two references to Section 401.2 are removed and not replaced because they are actually erroneous references that should have been removed in a previous cycle. Their
removal here is at most editorial, but could even be construed as errata. The reference to 401.2 used to match a provision in FBC Chapter 34 that referred to Section 3401.2 Maintenance, but that
section no longer exists in the FEBC in any of its compliance methods. The first instance could be revised to refer instead to 302.4, but it is frankly not needed, as 302.4 applies even without a direct reference. The second instance is clearly a mistaken reference to the old maintenance provision, not a reference to the current provisions about new and existing materials.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is already a code requirement

Impact to industry relative to the cost of compliance with code

No impact to building and property owners as this is already a code requirement

Impact to small business relative to the cost of compliance with code

No impact to small businesses as this is already a code requirement

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by cleaning up duplicate language

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by cleaning up duplicate language

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against material, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit material, products, methods, or systems of construction

Does not degrade the effectiveness of the code

Increases the effectiveness of the code by cleaning up duplicate language

Delete without substitution:

~~**401.2 Building materials and systems.** Building materials and systems shall comply with the requirements of this section.~~

~~**401.2.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.~~

~~**401.2.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

~~**401.2.3 Existing seismic force-resisting systems.** Where the existing seismic force-resisting system is a type that can be designated ordinary, values of R, 0 and Cdfor the existing seismic force-resisting system shall be those specified by the International Building Code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.~~

Revise as follows:

403.1 General. Except as provided by ~~Section 401.2~~Sections 302.3, 302.4, or this section, *alterations* to any building or structure shall comply with the requirements of the *Florida Building Code* for new construction. *Alterations* shall be such that the existing building or structure is no less conforming to the provisions of the *Florida Building Code* than the *existing building* or structure was prior to the *alteration*.

Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the *Florida Building Code* where the existing space and construction does not allow a reduction in pitch or slope.

2. Handrails otherwise required to comply with Section 1011.11 of the *Florida Building Code* shall not be required to comply with the requirements of Section 1014.6 of the *Florida Building Code* regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

404.1 General. Buildings and structures, and parts thereof, shall be repaired in compliance with ~~Sections 401.2 and 404~~this section. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for alterations in this chapter. ~~Routine maintenance required by Section 401.2~~Maintenance, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

Delete without substitution:

~~**602.1 Existing building materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the code *official* to render the building or structure *unsafe* or dangerous as defined in Chapter 2. **602.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no *dangerous* or *unsafe condition*, as defined in Chapter 2, is created. Hazardous materials, such as~~

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~~asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

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F8232

Date Submitted	12/14/2018	**Section**	401.2.1	**Proponent**	Ann Russo4
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

401.2.2
302.1 602.2

Summary of Modification

Deletes the "Existing [Building] Materials" and "New and Replacement Materials" sections from Chapters 4 and 6 because they are already inserted in chapter 3.

Rationale

This Modification deletes the "Existing [Building] Materials" and "New and Replacement Materials" sections from Chapters 4 and 6 because they are already inserted in chapter 3. The content in
Chapter 3 applies to all methods in the FEBC so deleting these sections in the other method chapters reduces redundancy.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity as this is already a code requirement

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is already a code requirement

Impact to industry relative to the cost of compliance with code

No impact to industry as this is already a code requirement

Impact to small business relative to the cost of compliance with code

No impact to small businesses as this is already a code requirement

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by removing wording that already is in Chapter 3

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by removing wording that already is in Chapter 3

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Improves the health, safety, and welfare of the general public by removing wording that already is in Chapter 3

Does not degrade the effectiveness of the code

Improves the effectiveness of the code by removing wording that already is in Chapter 3

Delete without substitution:

~~**401.2.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.~~

~~**401.2.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

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F8235

Date Submitted	12/14/2018	**Section**	401.2.4	**Proponent**	Ann Russo4
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

It add a new section 401.2.4 that allows alteration projects using the prescriptive method to use sprinkler systems as alternatives to other forms of protection as allowed in the Building Code and as allowed in the FEBC for the work area method.

Rationale

"The topic of allowing the ability to apply sprinkler protection trade-offs that exist in the current code has been a matter of discussion in the code development arena for some time. How to apply the allowance for a potential reduction in fire-resistance ratings and in what code they belong have been discussed without a consensus.
"The concept is that once a building without sprinkler protection has been sprinklered throughout, whether due to renovations or retroactive code application, the designer should be permitted to allow the same fire resistance rating provisions for new construction in an existing sprinklered building. The issue is how to provide for that application of code and ensure a proper review by the building code official is performed to ensure there are no impediments to granting an approval that may result in the reduction of existing levels of protection.
The suggested language provides that once an existing building is sprinklered throughout and meets the other fire protection requirements of Chapter 9 of the FBC, plans, investigation and evaluation reports, and other data can be submitted seeking approval of the code official for the assignment of the new fire-resistance ratings which might me a reduction, or potentially an increase."The suggested language also requires that any special construction features, conditions of occupancy, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted. This is to ensure special conditions are identified that may prevent a reduction in fire-resistance ratings."

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal could reduce the cost of construction because it allows alteration projects using the prescriptive method to use sprinkler systems as alternatives to other forms of protection as allowed in the Building Code and as allowed in the FEBC for the work area method.

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners as this is will not increase the cost of construction

Impact to industry relative to the cost of compliance with code

No impact to industry as this is will not increase the cost of construction

Impact to small business relative to the cost of compliance with code

No impact to small business as this is will not increase the cost of construction

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improves the health, safety, and welfare of the general public by allowing alteration projects using the prescriptive method to use sprinkler systems as alternatives to other forms of protection as allowed in the Building Code and as allowed in the FEBC for the work area method.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by allowing alteration projects using the prescriptive method to use sprinkler systems as alternatives to other forms of protection as allowed in the Building Code and as allowed in the FEBC for the work area method.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against material, products, methods, or systems of construction of demonstrated capabilities, this is a current code requirement that does not limit material, products, methods, or systems of construction

Does not degrade the effectiveness of the code

Increases the effectiveness the code by allowing alteration projects using the prescriptive method to use sprinkler systems as alternatives to other forms of protection as allowed in the Building Code and as allowed in the FEBC for the work area method.

Add new text as follows:

401.2.4 Fire resistance ratings Where approved by the code official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the Florida Building Code has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet the other applicable requirements of the International Building Code.

Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the code official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means-of-egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

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F8374

Date Submitted	12/15/2018	**Section**	401	**Proponent**	Ann Russo8
Chapter	4	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

EB14-15 and
EB26-15 CH 5

Summary of Modification

EB14-15 & EB26-15 Combined per Mo Madani. Replaces the word "maintaining" with "restoring," to avoid confusion. Replaces the phrase "good or sound" (removed elsewhere in past cycles) with "pre-damage," as used elsewhere in Chapters 4 and 6. etc.

Rationale

EB14-15 - This proposal cleans up repetitive language in Chapters 4 and 6 now found in Chapter 3.
EB26-15 - Replaces the word "maintaining" with "restoring," to avoid confusion between maintenance and repair. It replaces the phrase "good or sound" (removed elsewhere in past cycles) with "pre-damage," as used elsewhere in Chapters 4 and 6.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Code clarification only and has no effect on enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

Code clarification only and does not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Code clarification only and does not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Code clarification only and does not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Code clarification only and has no effect on enforcement of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Code clarification only and has no effect on the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Code clarification only. Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not degrade the effectiveness of the code

Code clarification only. Does not degrade the effectiveness of the code.

ICC MOD's Combined per Mo Madani - EB14-15 & EB26-15 Section: 401.2, 401.2.1, 401.2.2, 401.2.3, 403.1, 404.1, 502.1, 602.1, 602.3

Delete without substitution:

401.2 Building materials and systems. Building materials and systems shall comply with the requirements of this section.

401.2.1 Existing materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 15.

401.2.2 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no hazard to life, health or property is created. Hazardous materials shall not be used wherethecodefornewconstructionwouldnotpermittheiruseinbuildingsof similar occupancy, purpose and location.

401.2.3 **Existingseismicforce-resistingsystems.**Whereexistingseismicforce-resistingsystemis a type that can be designated ordinary, values of R, $_0$and $C_d$for the existing seismic force-resisting system shall be those specified by the *International Building Code* for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or specialsystem.

Revise as follows:

403.1 General. Except as provided by Section 401.2 Sections 302.3, 302.4, or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less conforming to the provisions of the *International Building Code* than the *existing building* or structure was priorto the *alteration*.

Exceptions:

1. **AnexistingstairwayshallnotberequiredtocomplywiththerequirementsofSection1011of the *International Building Code* where the existing space and construction does not allow a reduction in pitch or slope.**
2. Handrailsotherwiserequiredtocomplywith Section1011.11ofthe*International Building Code* shall not be required to comply with the requirements of Section 1014.6of the *International Building Code* regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

404.1 General. Buildings and structures, and parts thereof, shall be repaired in compliance with Sections 401.2 and 404 this section. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. Routine maintenance required by Section 401.2 Maintenance, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

Delete without substitution:

602.1 Existing building materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *code official* to render the building or structure unsafe or *dangerous* as defined in Chapter 2.

602.3 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no *dangerous* or *unsafe* condition,as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

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Section: 502.1

Revise as follows:

502.1 Scope. *Repairs,* as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, *equipment or fixtures* for the purpose of ~~maintaining such components in good or sound~~ restoring the pre-damage condition with respect to existing loads or performance requirements.

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F7358

Date Submitted	11/20/2018	**Section**	804.4.4	**Proponent**	Bryan Holland
Chapter	8	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language Yes

Related Modifications

7355, 7357

Summary of Modification

This proposed modification adds CO alarm requirement to the "Level 2 Alteration" requirements of the FBC-Existing Building.

Rationale

This proposed modification adds requirements for CO alarms in the Florida Existing Building Code to match those already required in the FBC-R and FFPC. This will harmonize the FEBC with the 2018 IEBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

Alternate Language

1st Comment Period History

7358-A1

Proponent Bryan Holland **Submitted** 1/8/2019 **Attachments** Yes

Rationale

This comment adds requirements for CO alarms into Chapter 11 of the Florida Existing Building Code to match those already required in the FBC-R and FFPC. This will harmonize the FEBC with the 2018 IEBC. This proposed language was originally included in Mod F7359 which was lost in a system glitch.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This comment will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This comment will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This comment will not change the cost of compliance or impact industry.

Impact to Small Business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This comment is directly connected to the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This comment improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This comment does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This comment enhances the effectiveness of the code.

1st Comment Period History

Proponent	Mo Madani	**Submitted**	1/27/2019	**Attachments**	No

F7358-G1

Comment:

Carbon monoxide provisions of the 2017 FBC are consistent with section 553.885 FS.

804.4.4 Carbon monoxide alarms. Any work area in Group I-1, I-2, I-4 and R occupancies shall be equipped with carbon monoxide alarms in accordance with the Florida Fire Prevention Code or Section R315 of the Florida Building Code-Residential, as applicable.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.

2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

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804.4.4 Carbon monoxide alarms. Any work area in Group I-1, I-2, I-4 and R occupancies shall be equipped with carbon monoxide alarms in accordance with the Florida Fire Prevention Code or Section R315 of the Florida Building Code-Residential, as applicable.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.

2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

SECTION 1108

CARBON MONOXIDE ALARMS IN GROUPS I-1, I-2, I-4 AND R

1108.1 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be equipped with carbon monoxide alarms in accordance with the Florida Fire Prevention Code or Section R315 of the Florida Building Code-Residential, as applicable.

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F7359

Date Submitted	12/15/2018	**Section**	805.3	**Proponent**	Kimberly Gilliam
Chapter	8	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

805.3.1, 805.3.1.1, Table 805.3.1.1(1) (New), Table 805.3.1.1(2) (New)

Summary of Modification

The intent of the proposal is coordination and an update to new terminology.

Rationale

Brings FBC, Existing Building into better alignment with FBC, Building.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. The proposed modification is a clarification and does not change requirements.

Impact to building and property owners relative to cost of compliance with code

None. The proposed modification is a clarification and does not change requirements.

Impact to industry relative to the cost of compliance with code

None. The proposed modification is a clarification and does not change requirements.

Impact to small business relative to the cost of compliance with code

None. The proposed modification is a clarification and does not change requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No, the proposed modification is a clarification and does not change requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, the clarification provides better coordination within the Code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, the clarification provides better coordination within the Code.

805.3 Number of exits.

The number of exits shall be in accordance with Sections 805.3.1 through 805.3.3.

805.3.1 Minimum number.

Every story utilized for human occupancy on which there is a *work area* that includes exits or corridors shared by more than one tenant within the *work area* shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the Florida Building Code, Building. In addition, the exits shall be permitted to comply with Sections 805.3.1.1 and 805.3.1.2.

805.3.1.1 Single-exit buildings.

~~Only one exit is required from buildings and spaces of the following occupancies:~~ A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. 1.The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or 805.3.1.1(2).

   ~~1.In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~

2. ~~2.Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m2), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~
3. ~~3.Open parking structures where vehicles are mechanically parked.~~
4. ~~4.In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~
5. ~~5.Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~
6. ~~6.In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:~~
   1. ~~6.1.The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or~~
   2. ~~6.2.The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.~~

2. In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from thedwelling or sleeping unit provided one of the following criteria aremet:

   2.1 The occupant load is not greater than 10 and the exit access travel distance withinthe unit does not exceed 75 feet (22 860 mm).

   2.2 The building is not more than three stories in height; all 3rd story space is part ofdwelling with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors does not exceed 50 feet (15 240 mm).

~~7.In Group R-2, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~

1. ~~8.In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an~~

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~~approved window providing a clear opening of at least 5 square feet (0.47 m2) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.~~

2. ~~9.~~ 3. In buildings of Group R-2 occupancy of any ~~height~~ number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the Florida Building Code, Building or an exterior exit stairway ~~or~~ outside stairway as an exit; and with such exit ~~located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.~~ where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is a maximum of 20 feet (6096 mm).
3. ~~10.In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.~~

TABLE 805.3.1.1(1)

STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, First or second story above grade plane	R-2[2]	4 dwelling units	50 feet
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot=3048
NP=Not Permitted.
NA=Not Applicable.

a. Group R-2, non-sprinklered and provided with emergency escape and rescue openings in accordance with Section 1030 of the *International BuildingCode*.

TABLE 805.3.1.1(2)

STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANTS LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	B, F-2, S-2[a]	35	75
Second story above grade plane	B, F-2, S-2[a]	35	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8mm.
NP=Not Permitted
NA=Not Applicable

a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30480mm).

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Code Change No: EB63-15

Original Proposal

Section: 805.3, 805.3.1, 805.3.1.1, Table 805.3.1.1(1) (New), Table 805.3.1.1(2) (New)

Proponent: Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

Revise as follows:

805.3 Number of exits. The number of exits shall be in accordance with Sections 805.3.1 through 805.3.3.

805.3.1 Minimum number. Every story utilized for human occupancy on which there is a *work area* that includes exits or corridors shared by more than one tenant within the *work area* shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the *International Building Code*. In addition, the exits shall be permitted to comply with Sections 805.3.1.1 and 805.3.1.2.

805.3.1.1 **Single-exit buildings.** ~~Only one exit is required from spaces of the following occupancies:~~ A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or 805.3.1.1(2).

~~1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~

~~2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m_2), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~

~~3. Open parking structures where vehicles are mechanically parked.~~

~~4. In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~

~~5. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~

~~6. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:~~

~~6.1. The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or~~

~~6.2. The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.~~

2. In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
   2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
   2.2. The building is not more than three stories in height; all 3rd story space is part of dwelling

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with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors shall not exceeds 50 feet (15 240 mm).

~~7. In Group R-2, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~

~~8. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m2) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.~~

3.~~9.~~ In buildings of Group R-2 occupancy of any ~~height~~ number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the *International Building Code* or an exterior exit stairway ~~outside stairway as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.~~ where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is a maximum of 20 feet (6096 mm).

~~10. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.~~

TABLE 805.3.1.1(1)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, First or second story above grade plane	R-2[a]	4 dwelling units	50 feet
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot=3048
NP=Not Permitted.
NA=Not Applicable.
a. Group R-2, non-sprinklered and provided with emergency escape and rescue openings in accordance with Section 1030 of the *International Building Code*.

-

TABLE 805.3.1.1(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANTS LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	B, F-2, S-2[a]	35	75
Second story above grade plane	B, F-2, S-2[a]	35	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8mm.
NP=Not Permitted
NA=Not Applicable
a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30480mm).

Reason: The current provisions are not keeping up with the allowances and changes in language for new buildings. This could be interpreted as existing buildings being more restrictive than new construction. Many items match IBC new construction allowances rather than allowing for additional options. To keep items correlated over time, the change to Section 805.3.1 is to allow for any option permitted in new construction. The reasons for the changes to Section 805.3.1.1 are found below. What can be put in tables similar to Table 1006.3.2(1) and Table 1006.3.2(2) has been made so to improve correlation and consistency over time.

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Item 1 is permitted for new construction, IBC Table 1006.3.2(2); therefore, it is proposed to be deleted.
Item 2 - This is the new item 1 and the table. The area is translated to occupant load (3500 sq.ft/100 sq.ft. per occupant) and added in a table. This is consistent with the approach for new construction and should increase consistency over time. The last sentence is addressing exit stairway enclosures, which are already addressed in stairway provisions. Note a in the table is so that it is understood that this allowance will not override the allowance for 100 feet in open parking that is permitted in new construction.
Item 3 is for mechanical parking garages is permitted in IBC Section 1006.3.2 Item 3; therefore, it is proposed to be deleted.
Item 4 for Group R-4 is technically incorrect with the language using occupant load rather than number of residents; in addition a single exit is permitted in IBC Section 1006.3.2 Item 4; therefore, it is proposed to be deleted.
Item 5 is based on old travel distance allowances for single exit apartment buildings – so this limitation should be for only non-sprinklered buildings. Group R-1 does not typically have dwelling units, so this is not logical for a hotel. This item should be deleted in favor new construction allowances in Table 1006.3.2(1) for apartment buildings. The last sentence is addressing exit stairway enclosures, which are already addressed in stairway provisions; therefore, it is proposed to be deleted.
Item 6 is more restrictive than the multi-story dwelling units permitted in Section 1006.3.2, Item 5. Group R-1 does not typically have dwelling units, so terminology is not logical for a hotel. If this is needed for large sleeping unit, this allowance should be added to new construction in IBC. For sprinklered buildings this item should be deleted in favor new construction allowances in Section 1006.3.2 Item 5 for multi-story dwelling units. The revised item 2 is limited to non-sprinklered buildings and the terminology has been updated. The occupant load was added to be consistent with the previous limit on dwelling units and travel distance before sprinklers were added (2003 IBC Section 1013.3 and 1014.1). There is no intent to change to the technical criteria.
Item 7 – Rooming houses a limiting factor for Group R-2 in new construction – current text would apply this to all Group R-2. In addition, R-2 congregate residences are now 16 or more. To fit into the maximum of 10 occupants, you are a Group R-3 now. Group R-3 has always had single exit with no travel distance, so this would be more restrictive than new sprinklered or existing not sprinklered. Child care centers could be read as E and I-4. Group I-4 is part of Group I and is the same for new construction. This requirement exceeds Group E requirements for new construction and should not be applicable. The provisions for I, H-4 and H-5 match new construction in Table 1006.3.2(2). Therefore, it is proposed to be deleted.
Item 8 is addressed for new construction in Table 1006.3.2(2), including the emergency escape window requirement; therefore, it is proposed to be deleted.
Item 9 (new Item 3) allows for a different travel distance measurement and additional number of stories for apartment buildings with 4 of fewer per story. Since this is unlimited height, this would apply to sprinklered and non-sprinklered existing buildings. The change is intended to be editorial only to match new terminology.
Item 10 is addressed already permitted for new construction in Section 1006.3.2 Item 3; therefore, it is proposed to be deleted.

Cost Impact: Will not increase the cost of construction
The code change proposal will not increase the cost of construction. The intent of the proposal is coordination and an update to new terminology. It is not intended to increase requirements.

Report of Committee Action Hearings

Committee Action: **Approved as Modified**

Modify as follows:

805.3.1.1 Single-exit buildings. A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or 805.3.1.1(2).
2. In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
   2.1 The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
   2.2 The building is not more than three stories in height; all 3rd story space is part of a dwelling with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room with any such unit to the unit entrance doors ~~shall~~ does not exceed 50 feet (15 240mm).
3. In buildings of Group R-2 occupancy of any number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the *International Building Code* or an exterior exit stairway where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is a maximum of 20 feet (6096mm).

Committee Reason: This proposal was approved as it aligns the allowance of single exit buildings with the IBC. It would be inappropriate for the IEBC to be more restrictive than the IBC. The modification simply makes an editorial revision to Item 2.2 to be consistent with the terminology used in Item 2.1. The revision revises "shall not exceeds" to "does not exceed."

Assembly Action: **None**

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Final Action Results

EB63-15 **AM**

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F8048

Date Submitted	12/12/2018	**Section**	804.2.4	**Proponent**	Kimberly Gilliam
Chapter	8	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

904.1.4 (New)

Summary of Modification

The intent of this code change is to address that the municipal water supply must be available at the floor level where the work area is located without the installation of a fire pump. Move to new section 904.1.4, bring into Level 3 alterations.

Rationale

The intent of this code change is to address the concern that the municipal water supply must be available at the floor level where the work area is located without the installation of a fire pump. The determining factor for an automatic fire sprinkler system should be whether there is adequate water at the site, not whether a fire pump may be required when achieving an acceptable level of public safety.

This code change revises the text so that the adequacy of a municipal water supply at the building site is the determining factor. When the work area exceeds 50% of the floor area and a fire sprinkler system would be required. The possible installation of a fire pump to supplement the water flow and pressure would not be the deciding factor when providing fire safety to the work area. Move to Section 904.1.4 bringing the provisions into Level 3 alterations.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Unknown whether this will lead to more existing buildings being required to add sprinkler systems, because even though the threshold is being lowered, the requirements are being moved from Level 2 alteration to Level 3 alteration.

Impact to building and property owners relative to cost of compliance with code

The cost of fire pump will be added to the cost of the fire sprinkler system. However, the same fire pump should be adequate for future fire sprinkler system installations in the building, therefore, the fire pump will be a one-time cost for the building and future alterations.

Impact to industry relative to the cost of compliance with code

The cost of fire pump will be added to the cost of the fire sprinkler system. However, the same fire pump should be adequate for future fire sprinkler system installations in the building, therefore, the fire pump will be a one-time cost for the building and future alterations.

Impact to small business relative to the cost of compliance with code

The cost of fire pump will be added to the cost of the fire sprinkler system. However, the same fire pump should be adequate for future fire sprinkler system installations in the building, therefore, the fire pump will be a one-time cost for the building and future alterations.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes, as it lowers the threshold at which existing buildings would require sprinkler systems.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, as it aligns with the latest ICC Codes, and lowers the threshold at which existing buildings would require sprinkler systems.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, it odes not degrade the effectiveness of the code.

~~804.2.4~~ 904.1.4 Other required automatic sprinkler systems.

In buildings and areas listed in Table 903.2.11.6 of the Florida Building Code, Building, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. 1.The *work area* is required to be provided with an automatic sprinkler system in accordance with the Florida Building Code, Building applicable to new construction; and
2. ~~2.The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.~~

   2.The building site has sufficient municipal water supply for design and installation of an automatic sprinkler system.

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Code Change No: EB61-15

Original Proposal

Section: 804.2.4

Proponent: Adolf Zubia, IAFC Fire & Life Safety Section, representing IAFC Fire & Life Safety Section

Revise as follows:

804.2.4 Other required automatic sprinkler systems. In buildings and areas listed in Table 903.2.11.6 of the *International Building Code*, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The *work area* is required to be provided with an automatic sprinkler system in accordance with the *International Building Code* applicable to new construction; and
2. ~~The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.~~

2. The building site has sufficient municipal water supply for design and installation of an automatic sprinkler system.

Reason: This proposal is submitted by Fire and Life Safety Section of the International Association of Fire Chiefs.
The intent of this code change is to address the concern that the minicipal water supply must be available at the floor level where the work area is located without the installation of a fire pump. The determining factor for an automatic fire sprinkler system should be whether there is adequate water at the site, not whether a fire pump may be required when achieving an acceptable level of public safety.

This code change revises the text so that the adequacy of a municipal water supply at the building site is the determining factor. When the work area exceeds 50% of the floor area and a fire sprinkler system would be required. The possible installation of a fire pump to supplement the water flow and pressure would not be the deciding factor when providing fire safety to the work area.

Cost Impact: Will not increase the cost of construction
The cost of fire pump will be added to the cost of the fire sprinkler system. However, the same fire pump should be adequate for future fire sprinkler system installations in the building, therefore, the fire pump will be a one-time cost for the building and future alterations.

Report of Committee Action Hearings

Committee Action: **Approved as Modified**

Modify as follows:

~~804.2.4~~ 904.1.4 **Other required automatic sprinkler systems.** *No change to text.*

Committee Reason: This proposal was seen as reasonable but only if moved to the Level 3 alterations provisions. The modification simply moved the section from Section 804.2.4 to Section 904.1.4 bringing the provisions into Level 3 alterations.

Assembly Action: **None**

Final Action Results

EB61-15	**AM**

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F8050

Date Submitted	12/13/2018	**Section**	805.3	**Proponent**	Joseph Belcher for FHBA
Chapter	8	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

This Mod includes changes 805.3.1, 805.3.1.1, and adds Table 805.3.1.1(1), and Table 805.3.1.1(2)

Summary of Modification

Brings FBC-EB in line with FBC-B for where single exit buildings are permitted. The FBC-EB was becoming more stringent than for new construction due to changes in the FBC-B.

Rationale

The following is extracted from the original ICC proponent's reason. Please see the Uploaded Support File for the entire text.

Reason: The current provisions are not keeping up with the allowances and changes in language for new buildings. This could be interpreted as existing buildings being more restrictive than new construction. Many items match IBC new construction allowances rather than allowing for additional options. To keep items correlated over time, the change to Section 805.3.1 is to allow for any option permitted in new construction. The reasons for the changes to Section 805.3.1.1 are found below. What can be put in tables similar to Table 1006.3.2(1) and Table 1006.3.2(2) has been made so to improve correlation and consistency over time.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact the change coordinates and clarifies the provisions for single exit buildings.

Impact to building and property owners relative to cost of compliance with code

No impact the change coordinates and clarifies the provisions for single exit buildings. May result in a decrease in cost due to FBC-EB becoming more stringent than FBC-B.

Impact to industry relative to the cost of compliance with code

No impact the change coordinates and clarifies the provisions for single exit buildings. May result in a decrease in cost due to FBC-EB becoming more stringent than FBC-B.

Impact to small business relative to the cost of compliance with code

No impact the change coordinates and clarifies the provisions for single exit buildings. May result in a decrease in cost due to FBC-EB becoming more stringent than FBC-B.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by coordinating, clarifying, and simplifying the provisions for single exit buildings.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by coordinating, clarifying, and simplifying the provisions for single exit buildings.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

805.3 Number of exits. The number of exits shall be in accordance with Sections 805.3.1 through 805.3.3.

805.3.1 Minimum number. Every story utilized for human occupancy on which there is a *work area* that includes exits or corridors shared by more than one tenant within the *work area* shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the *Florida Building Code-Building*. In addition, the exits shall be permitted to comply with Sections 805.3.1.1 and 805.3.1.2.

805.3.1.1 Single-exit buildings. ~~Only one exit is required from spaces, of the following occupancies:~~ A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or805.3.1.1(2).

~~1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~

~~2. GroupB,F-2,and S-2occupanciesnotmorethantwo stories in height that are not greater than 3,500 square feet per floor (326 m_2), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1hour.~~

~~3. Open parking structures where vehicles are mechanically parked.~~

~~4. In Group R-4 occupancies, the maximum occupant load excluding staff is16.~~

~~5. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~

~~6. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:~~

~~6.1. The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or~~

~~6.2. The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor, and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.~~

2. In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:

2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).

2.2. The building is not more than three stories in height; all 3rd story space is part of dwelling with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance door does not exceed 50 feet (15 240 mm).

~~7. In Group R-2, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860mm).~~

~~8. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear openingofatleast5squarefeet(0.47m2)in area,a minimum netclearopeningof24inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.~~

3. ~~9.~~ In buildings of Group R-2 occupancy of any height number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the *Florida Building Code-Building* or an exterior exit stairway ~~outside stairway as an exit;and with such exit located within20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.~~where the portion of the exit access travel distance from the dwelling unit entrance door to the exit isa maximum of 20 feet (6096 mm).

~~10. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.~~

TABLE 805.3.1.1(1)

~~STORIES~~ WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

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STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, First or second story above grade plane	R-2[2]	4 dwelling units	50 feet
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot=3048
NP=Not Permitted.
NA=Not Applicable.
a. Group R-2, non-sprinklered and provided with emergency escape and rescue openings in accordance with Section 1030 of the *Florida BuildingCode-Building*.

TABLE 805.3.1.1(2)

STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANTS LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	B, F-2, S-2[a]	35	75
Second story above grade plane	B, F-2, S-2[a]	35	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8mm.
NP=Not Permitted
NA=Not Applicable

a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30480mm).

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_8050_TextOfModification_2.png

Reason: The current provisions are not keeping up with the allowances and changes in language for new buildings. This could be interpreted as existing buildings being more restrictive than new construction. Many items match IBC new construction allowances rather than allowing for additional options. To keep items correlated over time, the change to Section 805.3.1 is to allow for any option permitted in new construction. The reasons for the changes to Section 805.3.1.1 are found below. What can be put in tables similar to Table 1006.3.2(1) and Table 1006.3.2(2) has been made so to improve correlation and consistency over time.

Item 1 is permitted for new construction, IBC Table 1006.3.2(2); therefore, it is proposed to be deleted.
Item 2 - This is the new item 1 and the table. The area is translated to occupant load (3500 sq.ft/100 sq.ft. per occupant) and added in a table. This is consistent with the approach for new construction and should increase consistency over time. The last sentence is addressing exit stairway enclosures, which are already addressed in stairway provisions. Note a in the table is so that it is understood that this allowance will not override the allowance for 100 feet in open parking that is permitted in new construction.
Item 3 is for mechanical parking garages is permitted in IBC Section 1006.3.2 Item 3; therefore, it is proposed to be deleted. Item 4 for Group R-4 is technically incorrect with the language using occupant load rather than number of residents; in addition a single exit is permitted in IBC Section 1006.3.2 Item 4; therefore, it is proposed to be deleted.
Item 5 is based on old travel distance allowances for single exit apartment buildings – so this limitation should be for only non- sprinklered buildings. Group R-1 does not typically have dwelling units, so this is not logical for a hotel. This item should be deleted in favor new construction allowances in Table 1006.3.2(1) for apartment buildings. The last sentence is addressing exit stairway enclosures, which are already addressed in stairway provisions; therefore, it is proposed to be deleted.
Item 6 is more restrictive than the multi-story dwelling units permitted in Section 1006.3.2, Item 5. Group R-1 does not typically have dwelling units, so terminology is not logical for a hotel. If this is needed for large sleeping unit, this allowance should be added to new construction in IBC. For sprinklered buildings this item should be deleted in favor new construction allowances in Section 1006.3.2 Item 5 for multi-story dwelling units. The revised item 2 is limited to non-sprinklered buildings and the terminology has been updated. The occupant load was added to be consistent with the previous limit on dwelling units and travel distance before sprinklers were added (2003 IBC Section 1013.3 and 1014.1). There is no intent to change to the technical criteria.
Item 7 – Rooming houses a limiting factor for Group R-2 in new construction – current text would apply this to all Group R-2. In addition, R-2 congregate residences are now 16 or more. To fit into the maximum of 10 occupants, you are a Group R-3 now. Group R-3 has always had single exit with no travel distance, so this would be more restrictive than new sprinklered or existing not sprinklered. Child care centers could be read as E and I-4. Group I-4 is part of Group I and is the same for new construction. This requirement exceeds Group E requirements for new construction and should not be applicable. The provisions for I, H-4 and H-5 match new construction in Table 1006.3.2(2). Therefore, it is proposed to be deleted.
Item 8 is addressed for new construction in Table 1006.3.2(2), including the emergency escape window requirement; therefore, it is proposed to be deleted.
Item 9 (new Item 3) allows for a different travel distance measurement and additional number of stories for apartment buildings with 4 of fewer per story. Since this is unlimited height, this would apply to sprinklered and non-sprinklered existing buildings. The change is intended to be editorial only to match new terminology.
Item 10 is addressed already permitted for new construction in Section 1006.3.2 Item 3; therefore, it is proposed to be deleted.

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction. The intent of the proposal is coordination and an update to new terminology. It is not intended to increase requirements.

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F8297

Date Submitted	12/15/2018	**Section**	804.4.1.7	**Proponent**	Harold Barrineau
Chapter	8	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

None

Summary of Modification

804.4.1.7 Group R-4.

Rationale

This proposal is a clarification of requirements and correlation of requirements. Smoke alarms are addressed in Section 804.3.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal does not impact local entity relative to enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This proposal is a clarification only.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal is a clarification only.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This proposal is a clarification only.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal improves the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal strengthens or improves the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Revise as follows:

A manual fire alarm system shall be installed in work areas of Group R-4 residential care/assisted living facilities as required by the Florida Fire Prevention Code for existing Group R-4 occupancies.

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F8307

Date Submitted	12/15/2018	**Section**	805.3	**Proponent**	Harold Barrineau
Chapter	8	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

805.3.1 Minimum number.
805.3.1.1 Single-exit buildings.

Summary of Modification

805.3 Number of exits.

Rationale

This proposal aligns the allowance of single exit buildings with the FBC Building. It would be inappropriate for the FBC Existing to be more restrictive than the FBC Building. The modification simply makes an editorial revision to Item 2.2 to be consistent with the terminology used in Item 2.1. The revision revises “shall not exceeds” to “does not exceed.”

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal does not impact local entity relative to enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
The code change proposal will not increase the cost of construction. The intent of the proposal is coordination and an update to new terminology. It is not intended to increase requirements.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
The code change proposal will not increase the cost of construction. The intent of the proposal is coordination and an update to new terminology. It is not intended to increase requirements.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
The code change proposal will not increase the cost of construction. The intent of the proposal is coordination and an update to new terminology. It is not intended to increase requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal improves the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal strengthens or improves the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Modify as follows:

805.3.1.1 Single-exit buildings. ~~Only one exit is required from buildings and spaces of the following occupancies:~~ A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. ~~In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~ The occupant load, number of dwelling units and exit access travel distance do not exceed the values in the Florida Building Code, Building Table 1006.3.2(1) or 1006.3.2(2).

2. ~~Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m2), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~ In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
   2.1 The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860mm).
   2.2 The building is not more than three stories in height; all 3rd story space is part of a dwelling with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room with any such unit to the unit entrance doors shall does not exceed 50 feet (15 240mm).

3. ~~Open parking structures where vehicles are mechanically parked.~~ In buildings of Group R-2 occupancy of any number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the International Building Code or an exterior exit stairway where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is a maximum of 20 feet (6096mm).

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F8310

Date Submitted	12/15/2018	**Section**	805.3.1.1	**Proponent**	Harold Barrineau
Chapter	8	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

None

Summary of Modification

805.3.1.1 Single-exit buildings.

Rationale

The terminology is old and many in the list are addressed by new construction.
IEBC Section 805.3.1. already says any single exits scenarios in IBC are permitted here.
•Item 4–Group R-4 is already addressed in new, so this is not needed. In addition, Group R-4 is based on the number of care recipients, not the occupant load, so the terminology is incorrect. If it is kept it should match the text in new construction–IBC Section 1006.3.2, Item 4. " Group R-3 and R-4 occupancies shall be permitted to have one exit or access to a single exit." However, to keep consistency over time, it is preferred that this be deleted.

•Item 7–In new provisions this limit is for Group R-2 with sleeping units. This could be read to be all Group R-2. Child care centers could be read to be both Group E and I-4.
In new construction this occupant load and travel distance is Group I-4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal does not impact local entity relative to enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This correlates IEBC with IBC for this extent of an alteration.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This correlates IEBC with IBC for this extent of an alteration.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This correlates IEBC with IBC for this extent of an alteration.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal improves the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal strengthens or improves the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Revise as follows:

805.3.1.1 Single-exit buildings. Only one exit is required from buildings and spaces of the following occupancies:

1.In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).

2.Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m^2), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.

3.Open parking structures where vehicles are mechanically parked.

~~4.In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~

~~5.~~ 4. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.

~~6.~~ 5. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:

~~6.1~~ 5.1 The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or

~~6.2~~ 5.2 The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.

~~7.~~ 6. In Group R-2 occupancies consisting of sleeping units, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).

~~8.~~ 7. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m^2) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.

~~9.~~ 8. In buildings of Group R-2 occupancy of any height with not more than four dwelling units per floor; with a smokeproof enclosure or outside stairway as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.

~~10.~~ 9. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

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Date Submitted	12/15/2018	**Section**	804.4.1.7	**Proponent**	Kimberly Gilliam
Chapter	8	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

This proposal is a clarification with the addition of the term “manual.” Section 907.2.10.1 of the FBC, Building only requires a manual fire alarm system. Smoke alarms are dealt with separately in Section 804.4.3.

Rationale

This proposal is a clarification of requirements and correlation of requirements. Smoke alarms are addressed in Section 804.3.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. The proposed modification does not change the requirement. It is only a clarification.

Impact to building and property owners relative to cost of compliance with code

None. The proposed modification does not change the requirement. It is only a clarification.

Impact to industry relative to the cost of compliance with code

None. The proposed modification does not change the requirement. It is only a clarification.

Impact to small business relative to the cost of compliance with code

None. The proposed modification does not change the requirement. It is only a clarification.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No, the proposed modification does not change the requirement. It is only a clarification.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, the proposed modification provides for a better coordinated code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, it improves the effectiveness of the code with better clarity and coordination.

804.4.1.7 Group R-4.

A manual fire alarm system shall be installed in *work areas* of Group R-4 residential care/ assisted living facilities as required by the Florida Fire Prevention Code for existing Group R-4 occupancies.

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Code Change No: EB62-15

Original Proposal

Section: 804.4.1.7

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair,Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Revise as follows:

804.4.1.7 Group R-4. A manual fire alarm system shall be installed in *work areas* of Group R-4 residential care/ assisted living facilities as required by Section 1103.7.7 of the *International Fire Code* for existing Group R-4 occupancies.

Reason: This proposal is a clarification of requirements and correlation of requirements. Smoke alarms are addressed in Section 804.3.

There is a Group B proposal to remove this requirement from new Group R-4s to have fire alarm systems in IBC/IFC Section 907.2.10 and from mandatory retrofit from IFC 1103.7.7. If this is successful, this section will also be deleted. If that is not approved, this clarification is needed.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction

This proposal is a clarification only.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal is simply a clarification with the addition of the term "manual." Section 1103.7.7 of the IFC only requires a manual fire alarm system. Smoke alarms are dealt with separately in Section 804.4.3.

Assembly Action: **None**

Final Action Results

EB62-15	**AS**

INTERNATIONAL CODE COUNCIL®

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F8359

Date Submitted	12/15/2018	**Section**	805.3.1.1	**Proponent**	Kimberly Gilliam
Chapter	8	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

The terminology is old and many in the list are addressed by new construction.

Rationale

The terminology is old and many in the list are addressed by new construction. Item 4 – Group R-4 is already addressed in new, so this is not needed. In addition, Group R-4 is based on the number of care recipients, not the occupant load, so the terminology is incorrect. If it is kept it should match the text in new construction – FBC, Building Section 1006.3.2, Item 4. "Group R-3 and R-4 occupancies shall be permitted to have one exit or access to a single exit." However, to keep consistency over time, it is preferred that this be deleted. Item 7 – In new provisions this limit is for Group R-2 with sleeping units. This could be read to be all Group R-2. Child care centers could be read to be both Group E and I-4. In new construction this occupant load and travel distance is Group I-4.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. This proposed modification does not change the requirements. It simply correlates FBC, Existing Building with FBC, Building for this extent of an alteration.

Impact to building and property owners relative to cost of compliance with code

None. This proposed modification does not change the requirements. It simply correlates FBC, Existing Building with FBC, Building for this extent of an alteration.

Impact to industry relative to the cost of compliance with code

None. This proposed modification does not change the requirements. It simply correlates FBC, Existing Building with FBC, Building for this extent of an alteration.

Impact to small business relative to the cost of compliance with code

None. This proposed modification does not change the requirements. It simply correlates FBC, Existing Building with FBC, Building for this extent of an alteration.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No, this proposed modification does not change the requirements. It simply correlates FBC, Existing Building with FBC, Building for this extent of an alteration.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, this proposed modification better correlates FBC, Existing Building with FBC, Building.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, it does not degrade the effectiveness of the code.

805.3.1.1Single-exit buildings.
Only one exit is required from buildings and spaces of the following occupancies:

1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).

2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m^2), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.

3. Open parking structures where vehicles are mechanically parked.

~~4. In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~

~~5.~~ 4. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.

~~6.~~ 5. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:

~~6.1~~5.1 The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or

~~6.2~~5.2 The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.

~~7.~~6. In Group R-2 occupancies consisting of sleeping units, H-4, H-5 and I occupancies ~~and in rooming houses and child care centers~~, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).

~~8.~~7. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m^2) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.

~~9.~~8. In buildings of Group R-2 occupancy of any height with not more than four dwelling units per floor; with a smokeproof enclosure or outside stairway as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.

~~10.~~9. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

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Code Change No: EB64-15

Original Proposal

Section: 805.3.1.1

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair,Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Revise as follows:

805.3.1.1 Single-exit buildings. Only one exit is required from buildings and spaces of the following occupancies:

1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).
2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m²), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
3. Open parking structures where vehicles are mechanically parked.
4. ~~In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~
4. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
5. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions ismet:
   5.1 The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or
   5.2 The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.
6. In Group R-2 occupancies consisting of sleeping units, H-4, H-5 and I occupancies ~~and in rooming houses and child care centers~~, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).
7. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m²) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.
8. In buildings of Group R-2 occupancy of any height with not more than four dwelling units per floor; with a smokeproof enclosure or outside stairway as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.
9. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

Reason: The terminology is old and many in the list are addressed by new construction. IEBC Section 805.3.1. already says any single exits scenarios in IBC are permitted here. The CTC Committee scope limits them to Items 4 and 7.

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• Item 4 – Group R-4 is already addressed in new, so this is not needed. In addition, Group R-4 is based on the number of care recipients, not the occupant load, so the terminology is incorrect. If it is kept it should match the text in new construction – IBC Section 1006.3.2, Item 4. " Group R-3 and R-4 occupancies shall be permitted to have one exit or access to a single exit." However, to keep consistency over time, it is preferred that this be deleted.
• Item 7 – In new provisions this limit is for Group R-2 with sleeping units. This could be read to be all Group R-2. Child care centers could be read to be both Group E and I-4. In new construction this occupant load and travel distance is Group I-4.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This correlates IEBC with IBC for this extent of an alteration.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal is consistent with EB63-15 but focuses only on care occupancies. The committee approved the proposal or consistency with the action taken on EB63-15 and as a precaution so that minimally these issues are addressed. The committee also agreed with the proponent's reason.

Assembly Action: **None**

Final Action Results

EB64-15 **AS**

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F8312

Date Submitted	12/15/2018	**Section**	1012.4	**Proponent**	Harold Barrineau
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

1012.5

Summary of Modification

TABLE 1012.4 (1012.4) MEANS OF EGRESS HAZARD CATEGORIES TABLE 1012.5 (1012.5) HEIGHTS AND AREAS HAZARD CATEGORIES

Rationale

The change in the table is consistent with the identification of different levels of hazards for the residents in a Group R-4. The conditions are based on the egress capability of the residents. Group R-4 Condition 1 is more consistent with Group R-3. Group R-2 Condition 2 is closer to a Group I-1.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal does not impact local entity relative to enforcement.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.
This is a reduction in requirements for Group R-4 Condition 1.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.
This is a reduction in requirements for Group R-4 Condition 1.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.
This is a reduction in requirements for Group R-4 Condition 1.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal improves the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal strengthens or improves the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Revise as follows:

TABLE 1012.4 (1012.4)

MEANS OF EGRESS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4 Condition 2
4	B, F-1, R-3, R-4 Condition 1, S-1
5 (Lowest Hazard)	F-2, S-2, U

TABLE 1012.5 (1012.5)

HEIGHTS AND AREAS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4 Condition 2
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, R-4 Condition 1, U

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F8369

Date Submitted	12/15/2018	**Section**	1012.4	**Proponent**	Kimberly Gilliam
Chapter	10	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

1012.5

Summary of Modification

Clarification so that the table is consistent with the identification of different levels of hazards for the residents in a Group R-4.

Rationale

The change in the table is consistent with the identification of different levels of hazards for the residents in Group R-4. The conditions are based on the egress capability of the residents. Group R-4 Condition 1 is more consistent with Group R-3. Group R-2 Condition 2 is closer to a Group I-1.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This is a reduction in requirements for Group R-4 Condition 1.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction. This is a reduction in requirements for Group R-4 Condition 1.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction. This is a reduction in requirements for Group R-4 Condition 1.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction. This is a reduction in requirements for Group R-4 Condition 1.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The conditions are based on the egress capability of the residents. Group R-4 Condition 1 is more consistent with Group R-3. Group R-2 Condition 2 is closer to a Group I-1.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, it provides clarification and better coordination within the Code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, it improves coordination within the Code.

TABLE 1012.4

MEANS OF EGRESS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4 Condition 2
4	B, F-1, R-3, R-4 Condition 1, S-1
5 (Lowest Hazard)	F-2, S-2, U

TABLE 1012.5

HEIGHTS AND AREAS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4 Condition 2
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, R-4 Condition 1, U

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Code Change No: EB67-15

Original Proposal

Section: Table 1012.4, Table 1012.5

Proponent: Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair,Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

Revise as follows:

TABLE 1012.4 (1012.4)
MEANS OF EGRESS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4 Condition 2
4	B, F-1, R-3, R-4 Condition 1, S-1
5 (Lowest Hazard)	F-2, S-2, U

TABLE 1012.5 (1012.5)
HEIGHTS AND AREAS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4 Condition 2
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, R-4 Condition 1, U

Reason: The change in the table is consistent with the identification of different levels of hazards for the residents in a Group R-4. The conditions are based on the egress capability of the residents. Group R-4 Condition 1 is more consistent with Group R-3. Group R-2 Condition 2 is closer to a Group I-1.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: http://www.iccsafe.org/cs/CTC/Pages/default.aspx.

Cost Impact: Will not increase the cost of construction
This is a reduction in requirements for Group R-4 Condition 1.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed with the proponent's reason. More specifically, the proposal appropriately divides the two conditions into the proper risk categories in Section 1012.

Assembly Action: **None**

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Final Action Results

EB67-15 **AS**

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F7450

Date Submitted	11/26/2018	**Section**	1401.6	**Proponent**	Richard Schauland
Chapter	14	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

This proposal adds "other codes" because other codes, such as the Florida Building Code, Building are referenced in Chapter 14.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no impact to local entities relative to the enforcement of the code. This revision is only a clarification of the current provision.

Impact to building and property owners relative to cost of compliance with code

This will not increase the cost of construction. This revision is only a clarification of the current provision.

Impact to industry relative to the cost of compliance with code

This will not increase the cost of compliance. This revision is only a clarification of the current provision.

Impact to small business relative to the cost of compliance with code

This will not increase the cost of compliance. This revision is only a clarification of the current provision.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The purpose of this section is to describe the evaluation process for existing structures. The proposed change is to add “other codes” to the language to make sure the minimum provisions are met from other codes for safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does not strengthen the Code, it provides clarity of an existing rule that will assist in a better understanding for enforcement.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal makes no mention of specific materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by providing clarity of the requirements.

1st Comment Period History

Proponent Richard Schauland **Submitted** 1/2/2019 **Attachments** No

F7450-G1

Comment:

Mod. CA7451 is related to this Mod.

1401.6 Evaluation process. The evaluation process specified herein shall be followed in its entirety to evaluate *existing buildings* in Groups A, B, E, F, M, R, S and U. For existing buildings in Group I-2, the evaluation process specified herein shall be followed and applied to each and every individual smoke compartment. Table 1401.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code or other codes indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 1401.6.16, the score for each occupancy shall be determined, and the lower score determined for each section of the evaluation process shall apply to the entire building, or to each smoke compartment for Group I-2 occupancies.

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Code Change No: EB77-15

Original Proposal

Section: 1401.6

Proponent: Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

1401.6 Evaluation process. The evaluation process specified herein shall be followed in its entirety to evaluate *existing buildings* in Groups A, B, E, F, M, R, S and U. For existing buildings in Group I-2, the evaluation process specified herein shall be followed and applied to each and every individual smoke compartment. Table 1401.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code or other codes indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 1401.6.16, the score for each occupancy shall be determined, and the lower score determined for each section of the evaluation process shall apply to the entire building, or to each smoke compartment for Group I-2 occupancies.

Where the separation between the mixed occupancies qualifies for any category indicated in Section 1401.6.16, the score for each occupancy shall apply to each portion, or smoke compartment of the building based on the occupancy of the space.

Reason: This proposal adds "other codes" because other codes, such as the International Building Code besides the IEBC are referenced in Chapter 14.

Cost Impact: Will not increase the cost of construction
Editorial

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The reference to "other codes" is necessary as there are minimum provisions that must be met from other I-Codes.

Assembly Action: **None**

Final Action Results

EB77-15	**AS**

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F8376

Date Submitted	12/15/2018	**Section**	1401.6	**Proponent**	Kimberly Gilliam
Chapter	14	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal adds "other codes" because other codes besides the FBC, Existing Building are referenced in Chapter 14.

Rationale

The reference to “other codes” is necessary as there are minimum provisions that must be met from other Florida Building Codes.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. The proposal is a clarification and does not impact cost.

Impact to building and property owners relative to cost of compliance with code

None. The proposal is a clarification and does not impact cost.

Impact to industry relative to the cost of compliance with code

None. The proposal is a clarification and does not impact cost.

Impact to small business relative to the cost of compliance with code

None. The proposal is a clarification and does not impact cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No, the proposal is a clarification and does not change the requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, the clarification improves the coordination of the Code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, the clarification improves the coordination of the Code.

1401.6 Evaluation process.

The evaluation process specified herein shall be followed in its entirety to evaluate *existing buildings* in Groups A, B, E, F, M, R, S and U. For existing buildings in Group I-2, the evaluation process specified herein shall be followed and applied to each and every individual smoke compartment. Table 1401.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code or other codes indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 1401.6.16, the score for each occupancy shall be determined, and the lower score determined for each section of the evaluation process shall apply to the entire building, or to each smoke compartment for Group I-2 occupancies.

Where the separation between the mixed occupancies qualifies for any category indicated in Section 1401.6.16, the score for each occupancy shall apply to each portion, or smoke compartment of the building based on the occupancy of the space.

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Code Change No: EB77-15

Original Proposal

Section: 1401.6

Proponent: Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

1401.6 Evaluation process. The evaluation process specified herein shall be followed in its entirety to evaluate *existing buildings* in Groups A, B, E, F, M, R, S and U. For existing buildings in Group I-2, the evaluation process specified herein shall be followed and applied to each and every individual smoke compartment. Table 1401.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code or other codes indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 1401.6.16, the score for each occupancy shall be determined, and the lower score determined for each section of the evaluation process shall apply to the entire building, or to each smoke compartment for Group I-2 occupancies.

Where the separation between the mixed occupancies qualifies for any category indicated in Section 1401.6.16, the score for each occupancy shall apply to each portion, or smoke compartment of the building based on the occupancy of the space.

Reason: This proposal adds "other codes" because other codes, such as the International Building Code besides the IEBC are referenced in Chapter 14.

Cost Impact: Will not increase the cost of construction
Editorial

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: The reference to "other codes" is necessary as there are minimum provisions that must be met from other I-Codes.

Assembly Action: **None**

Final Action Results

EB77-15	**AS**

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F8379

Date Submitted	12/15/2018	**Section**	1401.6.6	**Proponent**	Kimberly Gilliam
Chapter	14	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

1401.6.6.1

Summary of Modification

This proposal clarifies the issue as to the proper application of this section by providing a footnote to VO and modifies the text in 1401.6.6 to ensure that the maximum value of 2 applies to VO.

Rationale

The last sentence of 1401.6.6 states, "The maximum positive value for this requirement shall be 2." Since Table 1401.6.6(1) has a Value of 2, this application of this maximum positive value limit can create some confusion in the proper application of this section. This proposal clarifies the issue by providing a footnote to VO and modifies the text in 1401.6.6 to ensure that the maximum value of 2 applies to VO.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. The proposed modification is a clarification and does not change the requirement.

Impact to building and property owners relative to cost of compliance with code

None. The proposed modification is a clarification and does not change the requirement.

Impact to industry relative to the cost of compliance with code

None. The proposed modification is a clarification and does not change the requirement.

Impact to small business relative to the cost of compliance with code

None. The proposed modification is a clarification and does not change the requirement.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No, the proposed modification is a clarification and does not change the requirement.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, it improves the clarity of the Code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, it improves the clarity of the Code.

Mod 8379

1401.6.6 Vertical openings.
Evaluate the fire-resistance rating of interior exit stairways or ramps, hoistways, escalator openings, and other shaft enclosures within the building, and openings between two or more floors. Table 1401.6.6(1) contains the appropriate protection values. Multiply that value by the construction-type factor found in Table 1401.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 1401.7 under Safety Parameter 1401.6.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one-story building or if all the unenclosed vertical openings within the building conform to the requirements of Section 713 of the Florida Building Code, Building, enter a value of 2. The maximum positive value for this requirement (VO) shall be 2.

1401.6.6.1 Vertical opening formula.
The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF$$

(Equation 14-5)

where:

VO = Vertical opening value. The calculated value shall not be greater than positive 2.0.

PV = Protection value from Table 1401.6.6.(1).

CF = Construction-type factor from Table 1401.6.6.(2).

Date Submitted	12/15/2018	**Section**	1401.6.8	**Proponent**	Kimberly Gilliam
Chapter	14	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposal clarifies questions regarding the application of Table 1401.6.8.

Rationale

Column f in Table 1401.6.8 is the only table in Chapter 14 that is populated with a "-" line. The dash line could be read two ways for occupancies other than an I-2: 1. As a "0", potentially conflicting with "Category d" or; 2. As a "Not Applicable" indicator. The column has been revised to show "NA", which is then supported by a note at the bottom of the table to state that "NA" means "not applicable."

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None. The proposed modification is a clarification and does not change the requirements.

Impact to building and property owners relative to cost of compliance with code

None. The proposed modification is a clarification and does not change the requirements.

Impact to industry relative to the cost of compliance with code

None. The proposed modification is a clarification and does not change the requirements.

Impact to small business relative to the cost of compliance with code

None. The proposed modification is a clarification and does not change the requirements.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No, the proposed modification is a clarification and does not change the requirements.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, the clarification improves the coordination of the Code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No, it does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

No, the clarification improves the coordination of the Code.

TABLE 1401.6.8

AUTOMATIC FIRE DETECTION VALUES

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6	— NA
A-2	-25	-5	0	5	9	— NA
A-4, B, E, S-2	-4	-2	0	4	8	— NA
I-2	NP	NP	NP	4	5	2

NA=Not Applicable

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Code Change No: EB81-15

Original Proposal

Section: Table 1401.6.8

Proponent: Anthony Apfelbeck, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

Revise as follows:

TABLE 1401.6.8 (1401.6.8)
AUTOMATIC FIRE DETECTION VALUES

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6	—NA
A-2	-25	-5	0	5	9	—NA
A-4, B, E, S-2	-4	-2	0	4	8	—NA
I-2	NP	NP	NP	4	5	2

NA=Not Applicable

Reason: Column f in Table 1401.6.8 is the only table in Chapter 14 that is populated with a "-" line. The dash line could be read two ways for occupancies other than an I-2: 1. As a "0", potentially conflicting with "category d" or; 2. As a Not Applicable indicator. The proponent believes that the intent of "-" is a not applicable indicator. Therefore, the column is revised to show "NA" which is then supported by a note at the bottom of the table to state that "NA" means "not applicable."

Cost Impact: Will not increase the cost of construction
This is an editorial change providing clarity to the code with no cost impact.

Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal was purely editorial and answers questions regarding the application of this table.

Assembly Action: **None**

Final Action Results

EB81-15 **AS**

INTERNATIONAL CODE COUNCIL®

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F7361

269

Date Submitted	11/20/2018	**Section**	202	**Proponent**	Bryan Holland
Chapter	2	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes **Alternate Language** No

Related Modifications

Summary of Modification

This proposed modification revises the current definition of Carbon Monoxide Alarm and adds a definition for Carbon Monoxide Detector.

Rationale

This proposed modification will harmonize the FBC-R with the IRC, NFPA 72/720, and other applicable standards related to CO alarms.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

1st Comment Period History

F7361-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:

Carbon monoxide provisions of the 2017 FBC are consistent with section 553.885 FS.

~~CARBON MONOXIDE ALARM. A device for the purpose of detecting carbon monoxide, that produces a distinct audible alarm, and is listed or labeled with the appropriate standard, either ANSI/UL 2034 Standard for Single and Multiple Station CO Alarms, or UL 2075, Gas and Vapor Detector Sensor, in accordance with its application.~~

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

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F7122

Date Submitted	11/21/2017	**Section**	310.1.1	**Proponent**	Derek Wiechmann PG CBO
Chapter	3	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

Under
R310.1.1 Operational constraints .....
Exceptions:
1. A casement window utilizing a cranking mechanism that does not delay the window to open to the minimum opening area per R310.2.1 can be utilized as an emergency escape and rescue opening.

Summary of Modification

Under R310.1.1 Operational constraints ..... Exceptions: 1. A casement window utilizing a cranking mechanism that does not delay the window to open to the minimum opening area per R310.2.1 can be utilized as an emergency escape and rescue opening.

Rationale

This needs to be clarified for some jurisdictions throughout Florida do not allow cranks on egress windows and it will describe further to the window industries that there cannot be a delay in the window opening process in the event of an emergency

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

No impact to building and property owners relative to code enforcement.

Impact to industry relative to the cost of compliance with code

The impact to the construction industry relative to the cost of code compliance is a reduction in cost giving the builder more egress window options and not limiting their sales or installations for casement windows utilizing cranks.

Impact to small business relative to the cost of compliance with code

The impact to small business relative to the cost of code compliance is a reduction in cost giving the small business more egress window options and not limiting their sales for casement windows utilizing cranks.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes because it further describes what is required for an egress window, making an improvement for life safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes because it further describes what is required for an egress window, and it allows for the use of different window types, it strengthens the life safety code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

It does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This code change will not degrade the effectiveness of the code.

1st Comment Period History

F7122-G1

Proponent Dick Wilhelm **Submitted** 2/9/2019 **Attachments** No

Comment:

AAMA is opposed to the language ("does not delay the window to open") as it is not a measureable metric.

R310.1.1 Operational constraints and opening control devices. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge. Window opening control devices complying with ASTM F2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening.

Exceptions:

1. A casement window utilizing a cranking mechanism that does not delay the window to open to the minimum opening area per R310.2.1 can be utilized as an emergency escape and rescue opening.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7122_TextOfModification_1.png

Rationale: This needs to be clarified for some jurisdictions throughout Florida do not allow cranks on egress windows and it will describe further to the window industries that there cannot be a delay in the window opening process in the event of an emergency.

R310.1.1 Operational constraints and opening control devices. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge. Window opening control devices complying with ASTM F2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening.

Exceptions:

1. A casement window utilizing a cranking mechanism that does not delay the window to open to the minimum opening area per R310.2.1 can be utilized as an emergency escape and rescue opening.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7122_Text_R310 cranking mechanism_1.png

Rationale: This needs to be clarified for some jurisdictions throughout Florida do not allow cranks on egress windows and it will describe further to the window industries that there cannot be a delay in the window opening process in the event of an emergency.

R310.1.1 Operational constraints and opening control devices. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge. Window opening control devices complying with ASTM F2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening.

Exceptions:

1. A casement window utilizing a cranking mechanism that does not delay the window to open to the minimum opening area per R310.2.1 can be utilized as an emergency escape and rescue opening.

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F7335

Date Submitted	11/20/2018	**Section**	302.4.2	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification adds a 4th exception for membrane penetrations made by luminaires.

Rationale

This proposed modification will harmonize the FBC-R with the FBC-B, Section 714.5.2 as approved by the Commission under FS67-16. The proposal adds an additional exception which recognizes the listings of recessed incandescent and fluorescent can lights, or enclosure materials which protect recessed can lights or troffer light fixtures, which have been tested as a ceiling membrane penetration of fire-resistance-rated horizontal assemblies. There are currently twenty six UL listed can lights which incorporate integral fire protection which have evaluated for use in fire-resistance-rated horizontal assemblies. Similarly there are eleven UL listed enclosure materials which have been evaluated for their ability to protect penetrations in ceiling membranes by non fire rated can lights or troffer light fixtures.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry as the exception is an optional compliance path.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by permitting an alternate path to comply with the main rule with the use of products listed for the purpose.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by harmonizing the FBC-R with the FBC-B.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

R302.4.2 Membrane penetrations. Membrane penetrations shall comply with Section R302.4.1. Where walls are required to have a fire-resistance rating, recessed fixtures shall be installed so that the required fire-resistance rating will not be reduced.

Exceptions:

1. Membrane penetrations of not more than 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches (0.0103 m2) in area provided that the aggregate area of the openings through the membrane does not exceed 100 square inches (0.0645 m2) in any 100 square feet (9.29 m2) of wall area. The annular space between the wall membrane and the box shall not exceed 1/8 inch (3.1 mm). Such boxes on opposite sides of the wall shall be separated by one of the following:

1.1. By a horizontal distance of not less than 24 inches (610 mm) where the wall or partition is constructed with individual noncommunicating stud cavities.

1.2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose-fill, rockwool or slag mineral wool insulation.

1.3. By solid fire blocking in accordance with Section R302.11.

1.4. By protecting both boxes with listed putty pads.

1.5. By other listed materials and methods.

2. Membrane penetrations by listed electrical boxes of any materials provided that the boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The annular space between the wall membrane and the box shall not exceed 1/8 inch (3.1 mm) unless listed otherwise. Such boxes on opposite sides of the wall shall be separated by one of the following:

2.1. By the horizontal distance specified in the listing of the electrical boxes.

2.2. By solid fireblocking in accordance with Section R302.11.

2.3. By protecting both boxes with listed putty pads.

2.4. By other listed materials and methods.

3. The annular space created by the penetration of a fire sprinkler provided that it is covered by a metal escutcheon plate.

4. Ceiling membrane penetrations by listed luminaires or by luminaires protected with listed materials that have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7335_TextOfModification_1.png

F7336

Date Submitted	11/20/2018	**Section**	314.4	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification deletes an obsolete and unnecessary exception for smoke alarm interconnection requirements.

Rationale

This proposed modification deletes the exception to the smoke alarm interconnection rule based on previous limitations of wired-only technology. With the wide availability of wireless interconnected smoke alarms, the exception is no linger needed and only serves to reduce life and fire safety in existing buildings that will most benefit from the installation and interconnection of smoke alarms.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners unless the cost of wireless alarms are passed on to the consumer.

Impact to industry relative to the cost of compliance with code

This proposed modification will increase the cost of compliance where the exception may have been applicable previously. Wireless interconnect smoke alarms are becoming common-place products that are readily available on the market today and have comparable costs to traditional hard-wired alarms.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by removing an exception to smoke alarm interconnection rules that reduce life and property safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by removing an obsolete and unnecessary exception in existing buildings only. Smoke alarm interconnection is essential for effective occupant notification of fire.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

R314.4 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

~~Exception: Interconnection of smoke alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.~~

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7336_TextOfModification_1.png

F7337

Date Submitted	11/20/2018	**Section**	314.2.2	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification simply removes redundant language in the exceptions to smoke alarm installation requirements in existing buildings.

Rationale

This proposed modification removes the redundant language in the two exceptions. The code doesn't need to tell us the smoke alarm installation is exempt under these conditions within the exception.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by adding clarity and conciseness to the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by removing redundant language in the exceptions to the Section.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

R314.2.2 Alterations, repairs and additions. Where alterations, repairs or additions requiring a permit occur, or where one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of a porch or deck~~, are exempt from the requirements of this section~~.

2. Installation, alteration or repairs of plumbing or mechanical systems ~~are exempt from the requirements of this section~~.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7337_TextOfModification_1.png

F7339

Date Submitted	11/20/2018	**Section**	315	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification completely replaces the current R315 in the FBC-R related to carbon monoxide alarm requirements with R315 of the 2018 IRC.

Rationale

This proposed modification completely replaces R315 with the most current requirements for CO alarms as found in the 2018 IRC, which has been correlated and harmonized with the NFPA 72, NFPA 720, applicable UL product safety standards, and industry practices. The arrangement and format of the revised section is similar to R314 for smoke alarms.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by updating the rules for CO alarm installations to the most current industry and product safety standards.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by harmonizing the rules for CO alarms with those found in related industry standards and manufacturers installation instructions.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

1st Comment Period History

F7339-G1

Proponent Mo Madani **Submitted** 1/27/2019 **Attachments** No

Comment:

CO Provisions of the 2017 FBC, Residential is consistent with section 553.885 FS.

~~SECTION R315~~

~~CARBON MONOXIDE ALARMS~~

~~R315.1 Carbon monoxide protection. Every separate building or an addition to an existing building for which a permit for new construction is issued and having a fossil-fuel-burning heater or appliance, a fireplace, an attached garage, or other feature, fixture, or element that emits carbon monoxide as byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes.~~

~~Exception: This section shall not apply to existing buildings that are undergoing alterations or repair unless the alteration is an addition as defined in Section R315.1.3.~~

~~R315.1.1 Carbon monoxide alarm. The requirements of Section R315.1 shall be satisfied by providing for one of the following alarm installations:~~

~~1. A hard-wired carbon monoxide alarm.~~

~~2. A battery-powered carbon monoxide alarm.~~

~~3. A hard-wired combination carbon monoxide and smoke alarm.~~

~~4. A battery-powered combination carbon monoxide and smoke alarm.~~

~~R315.1.2 Combination alarms. Combination smoke/carbon monoxide alarms shall be listed and labeled by a nationally recognized testing laboratory.~~

~~R315.1.3 Addition shall mean. An extension or increase in floor area, number of stories or height of a building or structure.~~

SECTION R315

CARBON MONOXIDE ALARMS

R315.1 General. Carbon monoxide alarms shall comply with Section R315.

R315.1.1 Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be listed in accordance with UL 2034 and UL 217.

R315.2 Where required. Carbon monoxide alarms shall be provided in accordance with Sections R315.2.1 and R315.2.2.

R315.2.1 New construction. For new construction, carbon monoxide alarms shall be provided in dwelling units where either or both of the following conditions exist.

1. The dwelling unit contains a fuel-fired appliance.

2. The dwelling unit has an attached garage with an opening that communicates with the dwelling unit.

R315.2.2 Alterations, repairs and additions. Where alterations, repairs or additions requiring a permit occur, the individual dwelling unit shall be equipped with carbon monoxide alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of a porch or deck.

2. Installation, alteration or repairs of plumbing or mechanical systems.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7339_TextOfModification_1.png

R315.3 Location. Carbon monoxide alarms in dwelling units shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

R315.4 Combination alarms. Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

R315.5 Interconnectivity. Where more than one carbon monoxide alarm is required to be installed within an individual dwelling unit in accordance with Section R315.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of carbon monoxide alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

Exception: Interconnection of carbon monoxide alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.

R315.6 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.

Exceptions:

1. Carbon monoxide alarms shall be permitted to be battery operated where installed in buildings without commercial power.

2. Carbon monoxide alarms installed in accordance with Section R315.2.2 shall be permitted to be battery powered.

R315.7 Carbon monoxide detection systems. Carbon monoxide detection systems shall be permitted to be used in lieu of carbon monoxide alarms and shall comply with Sections R315.7.1 through R315.7.4.

R315.7.1 General. Household carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

R315.7.2 Location. Carbon monoxide detectors shall be installed in the locations specified in Section R315.3. These locations supersede the locations specified in NFPA 720.

R315.7.3 Permanent fixture. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy and owned by the homeowner.

R315.7.4 Combination detectors. Combination carbon monoxide and smoke detectors installed in carbon monoxide detection systems in lieu of carbon monoxide detectors shall be listed in accordance with UL 2075 and UL 268.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7339_TextOfModification_2.png

F7345

Date Submitted	11/20/2018	**Section**	324	**Proponent**	Bryan Holland
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This proposed modification updates the requirements for solar energy systems.

Rationale

This proposed modification updates the rules for solar energy systems be completely deleting the current R324 of the FBC-R and replacing with R324 of the 2018 IRC, which represents the most current industry practices and related standards. This update also harmonizes the FBC-R with the NFPA 70, NFPA 1, and NFPA 101 (FFPC) as these rules are already required within those standards.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed modification will not impact the local entity relative to code enforcement as these rules are standard practice for all solar energy installations.

Impact to building and property owners relative to cost of compliance with code

This proposed modification will not change the cost of compliance to building and property owners as these rules already exist in other applicable codes and standards.

Impact to industry relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact industry.

Impact to small business relative to the cost of compliance with code

This proposed modification will not change the cost of compliance or impact small business.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed modification is directly connected to the health, safety, and welfare of the general public by updating out-of-date rules for solar energy systems with the most current industry standards and practices.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed modification improves and strengthens the code by completely updating the rules related to solar energy systems with those already in practice by industry today.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed modification does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposed modification enhances the effectiveness of the code.

~~SECTION 324~~

~~SOLAR ENERGY SYSTEMS~~

~~R324.1 General. Solar energy systems shall comply with the provisions of this section.~~

~~R324.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Chapter 23 and the Florida Fire Prevention Code.~~

~~R324.3 Photovoltaic systems. Photovoltaic systems shall be designed and installed in accordance with Sections R324.3.1 through R324.6.1 and NFPA 70. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.~~

~~R324.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703.~~

~~R324.4 Rooftop-mounted photovoltaic systems. Rooftopmounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with Section R909.~~

~~R324.4.1 Roof live load. Roof structures that provide support for photovoltaic panel systems shall be designed for applicable roof live load. The design of roof structures need not include roof live load in the areas covered by photovoltaic panel systems. Portions of roof structures not covered by photovoltaic panels shall be designed for roof live load. Roof structures that provide support for photovoltaic panel systems shall be designed for live load, LR, for the load case where the photovoltaic panel system is not present.~~

~~R324.5 Building-integrated photovoltaic systems. Building-integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section R905.~~

~~R324.5.1 Photovoltaic shingles. Photovoltaic shingles shall comply with Section R905.16.~~

~~R324.6 Ground-mounted photovoltaic systems. Ground-mounted photovoltaic systems shall be designed and installed in accordance with Section R301.~~

~~R324.6.1 Fire separation distances. Ground-mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.~~

SECTION 324

SOLAR ENERGY SYSTEMS

R324.1 General. Solar energy systems shall comply with the provisions of this section.

R324.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Chapter 23 and the Florida Fire Prevention Code.

R324.3 Photovoltaic systems. Photovoltaic systems shall be designed and installed in accordance with Sections R324.3.1through R324.7.1, NFPA 70 and the manufacturer's installation instructions.

R324.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.

R324.4 Rooftop-mounted photovoltaic systems. Rooftop-mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with this section.

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R324.4.1 Structural requirements. Rooftop-mounted photovoltaic panel systems shall be designed to structurally support the system and withstand applicable gravity loads in accordance with Chapter 3. The roof on which these systems are installed shall be designed and constructed to support the loads imposed by such systems in accordance with Chapter 8.

R324.4.1.1 Roof load. Portions of roof structures not covered with photovoltaic panel systems shall be designed for dead loads and roof loads in accordance with Sections R301.4 and R301.6. Portions of roof structures covered with photovoltaic panel systems shall be designed for the following load cases:

1. Dead load (including photovoltaic panel weight) plus snow load in accordance with Table R301.2(1).

2. Dead load (excluding photovoltaic panel weight)plus roof live load or snow load, whichever is greater, in accordance with Section R301.6.

R324.4.1.2 Wind load. Rooftop-mounted photovoltaic panel or module systems and their supports shall be designed and installed to resist the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3).

R324.4.2 Fire classification. Rooftop-mounted photovoltaic panel systems shall have the same fire classification as the roof assembly required in Section R902.

R324.4.3 Roof penetrations. Roof penetrations shall be flashed and sealed in accordance with Chapter 9.

R324.5 Building-integrated photovoltaic systems. Building-integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section R905.

R324.5.1 Photovoltaic shingles. Photovoltaic shingles shall comply with Section R905.16.

R324.5.2 Fire classification. Building-integrated photovoltaic systems shall have a fire classification in accordance with Section R902.3.

R324.6 Roof access and pathways. Roof access, pathways and setback requirements shall be provided in accordance with Sections R324.6.1 through R324.6.2.1. Access and minimum spacing shall be required to provide emergency access to the roof, to provide pathways to specific areas of the roof, provide for smoke ventilation opportunity areas, and to provide emergency egress from the roof.

Exceptions:

1. Detached, nonhabitable structures, including but not limited to detached garages, parking shade structures, carports, solar trellises and similar structures, shall not be required to provide roof access.

2. Roof access, pathways and setbacks need not be provided where the code official has determined that rooftop operations will not be employed.

3. These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (17-percent slope) or less.

R324.6.1 Pathways. Not fewer than two pathways, on separate roof planes from lowest roof edge to ridge and not less than 36 inches (914 mm) wide, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, a pathway not less than 36 inches wide (914 mm) shall be provided from the lowest roof edge to ridge on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.

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R324.6.2 Setback at ridge. For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge.

R324.6.2.1 Alternative setback at ridge. Where an automatic sprinkler system is installed within the dwelling in accordance with NFPA 13D or Section P2904, setbacks at ridges shall comply with one of the following:

1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge.

2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge.

R324.6.2.2 Emergency escape and rescue opening. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36 inches (914 mm) wide shall be provided to the emergency escape and rescue opening.

R324.7 Ground-mounted photovoltaic systems. Ground-mounted photovoltaic systems shall be designed and installed in accordance with Section R301.

R324.7.1 Fire separation distances. Ground-mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.

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F7475

Date Submitted	11/28/2018	**Section**	324	**Proponent**	John Hall
Chapter	3	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

No related modifications have been identified as necessary.

Summary of Modification

The modification provides for roof access pathways and location and spacing dimensions for rooftop mounted solar PV systems. First responder safety is paramount. This provides safe access and egress during fire fighting operations.

Rationale

This modification provides for access pathways on roofs where photovoltaic panels are installed. This provides a safe path on the roof for firefighters to perform ventilation operations. This modification provides the same measure of safety for first responders to residential fires as for non-residential fires.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no cost impact relative to enforcement of the code due to this proposed modification. The inspection activity will be performed during already required inspections that are regularly scheduled.

Impact to building and property owners relative to cost of compliance with code

There will be no cost impact to building and property owners for compliance. The modifications addresses only the location and spacing of the solar equipment placed on the roof.

Impact to industry relative to the cost of compliance with code

There will be no cost impact to industry for compliance. The modification addresses only to one- and two-family dwellings and townhouses.

Impact to small business relative to the cost of compliance with code

There is no impact to small business. The provisions are limited to one- and two-family dwellings and townhouses.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposed modification has a reasonable and substantial connection with the health, safety, and welfare of the general public through provision of safe access paths for firefighters during fire fighting operations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposed modification improves the code by making provision for safe access paths for firefighters during fire fighting operations.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposed modification does not discriminate against any materials, products, methods, or systems of construction as none are specified. The modification simply provides safe access paths for firefighters during firefighting operations.

Does not degrade the effectiveness of the code

The proposed modification does not degrade the effectiveness of the code. The implementation of the code is enhanced through the provision of safe access paths for firefighters during firefighting operations.

SECTION 324

SOLAR ENERGY SYSTEMS

R324.1 General. Solar energy systems shall comply with the provisions of this section.

R324.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Chapter 23 and the *Florida Fire Prevention Code.*

R324.3 Photovoltaic systems. Photovoltaic systems shall be designed and installed in accordance with Sections R324.3.1 through R324.7.1, NFPA 70 and the manufacturer's installation instructions.

R324.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be *listed* and *labeled* in accordance with UL 1741. Systems connected to the utility grid shall use inverters *listed* for utility interaction.

R324.4 Rooftop-mounted photovoltaic systems. Rooftop-mounted *photovoltaic panel systems* installed on or above the roof covering shall be designed and installed in accordance with this section.

R324.4.1 Structural requirements. Rooftop-mounted *photovoltaic panel systems* shall be designed to structurally support the system and withstand applicable gravity loads in accordance with Chapter 3. The roof on which these systems are installed shall be designed and constructed to support loads imposed by such systems in accordance with Chapter 8.

R324.5 Building-integrated photovoltaic systems. Building-integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section R905.

R324.5.1 Photovoltaic shingles. Photovoltaic shingles shall comply with Section R905.16.

R324.5.2 Fire Classification. *Building-integrated photovoltaic systems* shall have a fire classification in accordance with Section R902.3.

~~**R324.6 Ground-mounted photovoltaic systems.**~~

~~Groundmounted photovoltaic systems shall be designed and installed in accordance with Section R301.~~

~~**R324.6.1 Fire separation distances.**~~

~~Ground-mounted photovoltaic systems shall be subject to the~~ *fire separation distance* ~~requirements determined by the local~~ *jurisdiction*~~.~~

(Section R324.6 relocated and renumbered to R324.7)

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R324.6 Roof access and pathways. Roof access, pathways and setback requirements shall be provided in accordance with Sections 324.6.1 through R324.6.2.1. Access and minimum spacing shall be required to provide emergency access to the roof, to provide pathways to specific areas of the roof, provide for smoke ventilation opportunity areas, and to provide emergency egress from the roof.

Exceptions:

1. Detached, non-habitable structures, including but not limited to detached garages, parking shade structures, carports, solar trellises and similar structures, shall not be required to provide roof access.
2. Roof access. Pathways and setbacks need not be provided where the code official has determined that rooftop operations will not be employed.

R324.6.1 Pathways. Not fewer than two pathways, on separate roof planes from lowest roof edge to ridge and not less than 36 inches (914 mm) wide, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, a pathway not less than 36 inches wide (914 mm) shall be provided from the lowest roof edge to ridge on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.

R324.6.2 Setback at ridge. For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge.

R324.6.2.1 Alternative setback at ridge. Where an automatic sprinkler system is installed within the dwelling in accordance with NFPA 13D or Section P2904, setbacks at ridges shall comply with one of the following:

1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge.
2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge.

R324.6.2.2 Emergency escape and rescue opening. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36 inches (914 mm) wide shall be provided to the emergency escape and rescue opening.

R324.7 Ground-mounted photovoltaic systems. Ground-mounted photovoltaic systems shall be designed and installed in accordance with Section R301.

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R324.7.1 Fire separation distances. Ground-mounted photovoltaic systems shall be subject to the *fire separation distance* requirements determined by the local *jurisdiction.*

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PV Safety and Firefighting

Mod 7475 Rationale

By: Matthew Paiss

Published In: Issue #131, June / July 2009

Fire safety is typically the last thing people think of when planning their rooftop solar-electric system, but it quickly becomes a hot topic when a blaze ignites. Here's a look into the potential hazards of PV systems when a fire breaks out—and how to minimize risks to firefighters.

Why do firefighters climb up on the roof of a burning building? In a house fire, superheated smoke and gases (which can exceed 1,200°F) rise to the ceiling and then bank down back to the floor. Just one lungful of this smoke can kill. Cutting a hole in the highest point of the room allows the superheated gases and fire to rise out of the building, rapidly improving visibility as well as the survivability of the structure and those trapped inside. This also allows firefighters on the hose line to advance inside to locate the seat of the fire and any victims. This "vertical ventilation" has saved many lives and valuable property—besides actual rescue, this is one of a firefighter's primary responsibilities.

But the presence of rooftop-mounted PV arrays has made cutting through a roof more challenging. In the past, the fire service had plenty of room to ventilate where it is most effective—directly above the fire. With PV arrays now covering large areas of roofs, firefighters are limited in where they can cut and where they can exit the roof. Since the PV modules cannot be cut through, and moving them is time-consuming and potentially dangerous, rooftop PV systems pose some risks—mainly shock and trip hazards.

Most firefighters have had some education in electrical theory but usually employ the tactic of avoidance when it comes to electrical equipment. However, there are still those who believe that anything is manageable if you can swing an axe hard and fast enough—clearly not the best approach when dealing with electricity. Most firefighters will just ventilate as close as they can to the high point of a room. If an array is in the way, they will move to where they can cut safely and rapidly. One problem is that most roof systems employ lightweight trusses, held together by lightweight metal gusset plates. With small fastening points, they can warp and pull out in fire conditions. These roofs are known as "20-minute roofs," meaning that firefighters have 20 minutes or less to get up, make the necessary cuts, and get down before the roof gives out. So, time is of the essence when navigating a hot roof with a PV system.

Fire Safety Steps

Assessing the Situation. One of the first things firefighters do at the scene is to take a "hot lap"—a quick walk around the building to see all sides and to locate the utility shutoffs. It is usually at this point that a PV system is noted if the array was not visible upon arrival. An inverter—often outside near the meter and service panel—also serves as a signpost. Likewise, if metal conduit is present in an attic, that's a red flag that a PV system may be present.

But there are some cases where obvious indicators of a PV system are not evident—such as in cases where the modules are integrated into the roof or the inverter is located indoors. Besides visual identification, a common way to note a PV system is to look at the labels on the main service panel, typically located on an exterior wall. The labeling may be on the outside or inside of the main panel. There should be a dedicated breaker for the inverter, labeled "solar inverter" or some variation. This breaker also may be in a subpanel inside the structure, but a label on the main service panel should always state that there is a second generating source onsite as well as identify the dedicated breaker for the inverter. New guidelines from the California Office of the State Fire Marshal advocate labeling along the PV array's DC conduit run as well.

Shutting Down the System. With any structure fire, shutting off all the circuit breakers at the main distribution panel, closing any gas mains, and notifying all on the scene that the utilities are secure is standard operating procedure. Shutting down a PV system is not as simple or straightforward.

With grid-direct systems, the first step is to disconnect the inverter, which happens automatically when the utility power is shut off. Inverters also are designed with very good ground-fault interruption (GFI). If an inverter detects voltage between the ground and any of the metal conduit, the modules themselves, or the mounting racks, the inverter trips the

GFI and opens the circuit. The circuit is also opened when the inverter is shut down manually by tripping the main circuit breakers either for just the inverter or for the whole house.

However, even with the inverter off, there's no easy way to shut off the high-voltage DC electricity flowing through the array and the DC wiring. In daylight when there is an open circuit, the modules are still putting out full voltage. There's no current flowing—that is, unless it finds a path to ground, like through a firefighter or an axe breaking through walls or ceilings.

The use of a rooftop disconnect at the array can lead to a false sense of security, since that merely opens one side of the circuit. Complicating matters is that many PV systems have more than one subarray—which can be located on another section of roof. These subarrays could backfeed power through the inverter or combiner into the conduit that was supposed to be de-energized by the rooftop disconnect. The concept of having both the line and load sides of a disconnect energized is a potentially dangerous situation in this application. For this reason, the California Office of the State Fire Marshal frowns upon the installation of rooftop disconnects.

During daylight, there can be enough voltage and current to injure or even kill a firefighter who comes in contact with the energized conductors. A hanging conduit with wires sticking out of it is nothing out of the ordinary on the scene of a fire, so firefighters must exercise extreme caution when navigating a fire. It is best to always assume that a PV system is energized and steer clear of the modules and conduit. Here's an example: If a firefighter accidentally or deliberately axes through a string of twelve 44 VDC modules, he or she will experience a potentially deadly surge of 528 volts.

Off-grid and grid-connected systems with battery backup have a few more circuits to consider. First, PV array disconnects should be shut off. Second, the battery banks in these systems are another power source that need to be shut down via a main DC battery disconnect to fully de-energize the inverter and any AC circuit fed by the inverter, as well as any DC circuit that might be present. Like the PV array, battery banks are live even after they have been disconnected from the rest of the system. And even though most battery banks are wired to low DC voltages (commonly 24 V to 48 V), which pose less of a shock hazard than the high-voltage DC circuits discussed earlier, their low voltage and high current nature can cause fires from overheated connections. Batteries are also full of sulfuric acid and emit hydrogen gas that is highly flammable.

Battery banks are usually contained in a plastic, metal, or wooden storage box located near the system control panel—typically in the garage, basement, or shed. Battery banks also may be placed somewhere on the exterior of the house. If the heat and flames of the fire are near the battery bank, firefighters should use dry chemical or CO_2 extinguishers instead of water to avoid the potential for shock hazard of spraying a live inverter and to minimize damage to the batteries. That said, salvaging a battery pack is always secondary to firefighter safety and saving the structure. However, when dealing with a minor fire or an overheated battery connection, firefighters should act prudently and do their best to avoid damaging thousands of dollars' worth of equipment.

Eliminating the Source. One option for shutting down a PV system is to cover the arrays with opaque material, such as heavy canvas tarps or black plastic. Most fire response vehicles carry some type of salvage covers or tarps that are commonly used to protect belongings from water damage during firefighting. These same tarps can also be used to prevent light from reaching the PV cells, shutting off the flow of electricity to the inverter. However, high winds, tarp sizes, structural conditions, and the size and shape of the array may prevent using this option. Some departments do not carry suitable tarps, and common blue poly tarps will not work because they let too much light through.

Dealing with Conduit. If the array cannot be tarped, it is important for the crews inside to be careful when opening holes in the ceiling, as they may contact the conduit from the array with their tools. Since plastic insulated wire (Romex) is all that's typically required for home wiring, metal conduit is rarely used in an attic spaces.

Firefighters must verify whether a metal conduit run is intact. If so, it is grounded from the array to the inverter, so any wires that may be shorted to it from the high heat of a fire will carry any voltage/current to ground rather than to the firefighter who contacts it. In other words, it is safe to touch. But if portions of the roof have collapsed, it should be assumed that the conduit is no longer grounded and therefore dangerous to touch. Most fire departments carry

noncontact voltage detectors that can be used to find hot AC lines. Unfortunately, DC noncontact voltage detectors, which would alert firefighters to the presence of PV-generated electricity, are unavailable.

In a nighttime fire where the attic space was exposed to severe heat damage, the conduit and wires inside may have become compromised. Some arcing could begin as the rising sun energizes the modules the following morning—a potential for starting a new fire. A qualified solar contractor should be called in to disconnect the arrays. Unfortunately, most PV companies do not have an on-call technician available, so the disconnect usually must wait until the next day—not always the safest measure. In this case, most fire departments will post a "fire watch" until a qualified contractor can ensure the array is disconnected. Local utility companies are not responsible for the customer side (the house side of the meter) appliances and will not respond just to secure PV systems. This is where cooperation with the solar industry comes into play. The fire service recommends that all PV installers have an after-hours response contact for such emergency situations.

Keeping Safety in Mind

Identification is the key to understanding these systems and avoiding injury. Taking precautions with a PV array is one way to ensure the safety of firefighters and reduce the risks to your system. Beyond siting your system for optimal safety in the event of a fire, homeowners should consider installing interior fire sprinklers, which could be the critical difference between saving or salvaging your home and system. Invite your local fire department to tour your PV system if it's a rarity in your locale and provide them with a schematic of the system for their records. Further information about installing safe PV systems can be found in the California Office of the State Fire Marshal's draft guidelines.

Access

Fire engineer **Matthew Paiss** has been a member of the San Jose (California) Fire Department for 13 years. He teaches classes in PV safety, and has degrees in both fire science and solar technology. He has PV and solar thermal systems on his home.

Dan Fink has been a firefighter with the Rist Canyon (Colorado) Volunteer Fire Department for 10 years, and lives in a remote, completely off-grid corner of their response area. He is a writer and photographer for www.otherpower.com, with 16 years of experience in renewable energy system design, installation, and consulting.

F7539

Date Submitted	11/28/2018	**Section**	302.1	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB 37-16

Summary of Modification

Current language could be misinterpreted to allow the placement of structures accessory to other dwelling units adjacent to another unit without regard to fire separation distances. Clarify wording.

Rationale

Current language could be misinterpreted to allow the placement of structures accessory to other dwelling units adjacent to another unit without regard to fire separation distances.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not increase the cost of construction.This proposal is to provide clarity to an existing code section. No additional cost is associated with this proposal.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.This proposal is to provide clarity to an existing code section. No additional cost is associated with this proposal.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.This proposal is to provide clarity to an existing code section. No additional cost is associated with this proposal.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.This proposal is to provide clarity to an existing code section. No additional cost is associated with this proposal.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies wording.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies wording.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Clarifies wording.

Does not degrade the effectiveness of the code

Clarifies wording.

R302.1 Exterior walls. Construction, projections, openings and penetrations of *exterior walls* of *dwellings* and accessory buildings shall comply with Table R302.1(1); or *dwellings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 shall comply with Table R302.1(2).

Exceptions:

1. **Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.**
2. Walls of ~~*dwellings*~~ *individual dwelling units* and their *accessory structures* located on the same *lot*.
3. **Detached tool sheds and storage sheds, playhouses and similar structures exempt from permits are not required to provide wall protection based on location on the *lot*. Projections beyond the *exterior wall* shall not extend over the *lot line*.**
4. Detached garages accessory to a *dwelling* located within 2 feet (610 mm) of a *lot line* are permitted to have roof eave projections not exceeding 4 inches (102mm).
5. Foundation vents installed in compliance with this code are permitted.

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F7540

Date Submitted	11/28/2018	**Section**	302.10.1	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB 62-16

Summary of Modification

Clarification and language cleanup Section 302.10 intended to apply to all insulating materials the sentence as is causes confusion because it refers to two types of insulation materials

Rationale

This is simple clarification and language cleanup. Section 302.10 is intended to apply to all insulating materials but the sentence as is causes confusion because it refers to two types of insulation materials, namely (1) facings such as vapor retarders and vapor-permeable membranes and similar coverings and (2) all layers of single and multilayer reflective foil insulations. Therefore it is better if they are shown in a separate sentence at the end of the section that way the sentence is clearer.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will not increase the cost of construction Change is primarily editorial.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction Change is primarily editorial.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction Change is primarily editorial.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction Change is primarily editorial.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

clarification

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

clarification

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

clarification

Does not degrade the effectiveness of the code

clarification

R302.10.1 Insulation. ~~Insulation~~ Insulating materials~~, including facings, such as vapor retarders and vapor-permeable membranes~~ installed within floor-ceiling assemblies, roof-ceiling assemblies, wall assemblies, crawl spaces and ~~*attics*~~ attics shall ~~have~~ comply with the requirements of this section. They shall exhibit a flame spread index not to exceed 25 ~~with an accompanying~~ and a smoke-developed index not to exceed 450 where tested in accordance with ASTM E 84 or UL 723. Insulating materials, where tested in accordance with the requirements of this section, shall include facings, where used, such as vapor retarders, vapor permeable membranes and similar coverings.

Exceptions:

1. Where such materials are installed in concealed spaces, the flame spread index and smoke- developed index limitations do not apply to the facings, provided that the facingis installed in substantial contact with the unexposed surface of the ceiling, floor or wall finish.
2. Cellulose fiber loose-fill insulation, that is not spray applied, complying with the requirements of Section R302.10.3, shall not be required to meet the smoke-developed index of not more than 450 and shall be required to meet a smoke-developed index of not more than 450 where tested in accordance with CAN/UL CS102.2.

3. Foam plastic insulation shall comply with Section R316.

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F7645

Date Submitted	12/3/2018	**Section**	324	**Proponent**	John Hall
Chapter	3	**Affects HVHZ**	No	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes

Alternate Language No

Related Modifications

The location and numbering of this modification will be dependent upon any action taken on modification #7475.

Summary of Modification

The modification provides for solar ready features to facilitate the instalation of solar PV and solar thermal systems without resort to destructive methods.

Rationale

Solar photovoltaic and solar thermal systems are becoming more cost competitive in the marketplace. Adoption of this technology has many societal benefits. A serious hindrance to the adoption of solar technology is the destructive means required to install them on existing structures. This mod seeks to overcome this hindrance.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There will be no cost impact relative to enforcement of the code due to this proposed modification. The inspection activity will be performed during already required inspections that are regularly scheduled.

Impact to building and property owners relative to cost of compliance with code

There will be a cost impact to building and property owners for compliance. The requirements are minimal and the associated cost is negligible.

Impact to industry relative to the cost of compliance with code

There will be no cost impact to industry for compliance. The modification is only applicable to one- and two-family dwellings and townhouses.

Impact to small business relative to the cost of compliance with code

There will be no cost impact to small business for compliance. The modification is only applicable to one- and two-family dwellings and townhouses.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposed modification has a reasonable and substantial connection with the health, safety, and welfare of the general public by fostering adoption of solar technology that will reduce harmful emissions from use of fossil fuels.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The proposed modification improves the code by making provision for non-destructive installation of solar systems on existing structures.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposed modification does not discriminate against any materials, products, methods, or systems of construction as none are specified. The modification allows use of any existing code approved methods and materials for compliance.

Does not degrade the effectiveness of the code

The proposed modification does not degrade the effectiveness of the code. The implementation of the code is enhanced through the provision of features that simplify addition of solar systems to existing structures.

1st Comment Period History

F7645-G1

Proponent Stevie Freeman-Monte **Submitted** 1/29/2019 **Attachments** No

Comment:

I support this proposed code modification.

SECTION 324

SOLAR ENERGY SYSTEMS

R324.1 General. Solar energy systems shall comply with the provisions of this section.

R324.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Chapter 23 and the *Florida Fire Prevention Code.*

R324.3 Photovoltaic systems. Photovoltaic systems shall be designed and installed in accordance with Sections R324.3.1 through R324.7.1, NFPA 70 and the manufacturer's installation instructions.

R324.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be *listed* and *labeled* in accordance with UL 1741. Systems connected to the utility grid shall use inverters *listed* for utility interaction.

R324.4 Rooftop-mounted photovoltaic systems. Rooftop-mounted *photovoltaic panel systems* installed on or above the roof covering shall be designed and installed in accordance with this section.

R324.4.1 Structural requirements. Rooftop-mounted *photovoltaic panel systems* shall be designed to structurally support the system and withstand applicable gravity loads in accordance with Chapter 3. The roof on which these systems are installed shall be designed and constructed to support loads imposed by such systems in accordance with Chapter 8.

R324.5 Building-integrated photovoltaic systems. Building-integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section R905.

R324.5.1 Photovoltaic shingles. Photovoltaic shingles shall comply with Section R905.16.

R324.5.2 Fire Classification. *Building-integrated photovoltaic systems* shall have a fire classification in accordance with Section R902.3.

R324.6 Ground-mounted photovoltaic systems.
Groundmounted photovoltaic systems shall be designed and installed in accordance with Section R301.

R324.6.1 Fire separation distances.

Ground-mounted photovoltaic systems shall be subject to the *fire separation distance* requirements determined by the local *jurisdiction*.

R324.7 Solar-ready zone. New detached one- and two-family dwellings, and townhouses with not less than 600 square feet (55.74 m2) of roof area oriented between 90 degrees and 270 degrees of true north shall comply with Sections R324.9 through R324.17.

Exceptions:

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New residential buildings with a permanently installed on-site renewable energy system.

A building where all areas of the roof that would otherwise meet the requirements of Section R324.8 are in full or partial shade for more than 70 percent of daylight hours annually.

Solar-ready zone. A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic or solar thermal system.

R324.7.1 Construction document requirements for solar ready zone. Construction documents shall indicate the solar-ready zone.

R324.7.2 Solar-ready zone area. The total solar ready zone area shall be not less than 300 square feet (27.87m2) exclusive of mandatory access or set back areas as required by the *Florida Fire Prevention Code*. New townhouses three stories or less in height above grade plane shall have a solar-ready zone area of not less than 150 square feet (13.94 m2). The solar-ready zone shall be composed of areas not less than 5 feet (1524 mm) in width and not less than 80 square feet (7.44 m2) exclusive of access or set back areas as required by the *Florida Fire Prevention Code*.

R324.7.3 Obstructions. Solar-ready zones shall be free from obstructions, including but not limited to vents, chimneys, and roof-mounted equipment.

R324.7.4 Shading. The solar-ready zone shall be set back from any existing or new, permanently affixed object on the building or site that is located south, east or west of the solar zone a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees and roof plantings.

R324.7.5 Capped roof penetration sleeve. A capped roof penetration sleeve shall be provided adjacent to a solar-ready zone. The capped roof penetration sleeve shall be sized to accommodate the future photovoltaic system conduit, but shall have an inside diameter of not less than 11/4 inches (32 mm).

R324.7.6 Roof load documentation. The structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.

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R324.7.7 Interconnection pathway. Construction documents shall indicate pathways for routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.

R324.7.8 Electrical service reserved space. The main electrical service panel shall have a reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit breaker location.

> **Exception.** A listed enclosure on the supply side of the electrical service main disconnecting means providing access for future interconnection of a solar photovoltaic power production source shall be permitted. The listed enclosure shall be labeled "For Future Solar Electric." The label shall comply with NFPA 70 110.21(B).

R324.7.9 Construction documentation certificate. A permanent certificate, indicating the solar-ready zone and other requirements of this section, shall be posted near the electrical distribution panel, water heater or other conspicuous location by the builder or registered design professional.

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Fiscal Impact Assumptions Mod 7645

1. Electrical inspections will be required during the course of construction of a new dwelling. The inspections required by this modification will be performed during the regularly scheduled rough inspection.
2. The modification will result in negligible cost to the owner. The modification requires only three physical items to be installed, a capped roof penetration sleeve of a minimum inside diameter of 1.25 inches, a two pole space in the electrical panel, and labels indicating the location of the solar ready roof zone and the electrical panel space or supply side enclosure if provided.
3. The space in the electrical panel can be substituted with a listed enclosure on the supply side of the service main disconnecting means. This option would eliminate the need for additional space in the electrical panel.
4. All remaining requirements are for location of items to allow clear space on the roof for the system.

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Residential solar photovoltaics deployment: barriers and drivers in space

Palm, Alvar

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Residential solar photovoltaics deployment: barriers and drivers in space

Alvar Palm



LUND
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List of abbreviations:

IRR = Internal rate of return

PPA = Power purchase agreement

PV = (Solar) photovoltaics

TGC = tradable green certificates

TIS = Technological innovation system

TPO = Third-party ownership

Keywords: Solar photovoltaics (PV), renewable energy, sustainability transitions, technology deployment, diffusion of innovations, barriers, drivers, space, technological innovation system (TIS), technology adoption, business model, peer effects

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Abstract

In order to support a sustainability transition in the energy sector, actors need knowledge about barriers and drivers to the deployment of clean energy technologies. Solar photovoltaics (PV) is a renewable energy technology that is technically mature and on the verge of becoming economically competitive in numerous regions around the world. Not least in the residential segment, PV has considerable potential. Even after residential PV has reached economic competitiveness, however, the technology might still face important barriers in the sociotechnical system in which it is to be deployed.

This thesis aims at adding knowledge about barriers and drivers to the deployment of residential PV systems. The research takes a sociotechnical systems perspective and demonstrates how the *technological innovation systems* (TIS) framework can be amended by the *business models* and the *diffusion of innovations* frameworks to study the deployment of a mature technology in a catching-up market, treating technology development and production as a 'black box'. The research is largely based on case studies and uses various modes of data collection and analysis. The bulk of the research was performed in Swedish settings on the national and local levels, although the United States, Germany and Japan were also studied. Studying these different contexts, the thesis builds knowledge about barriers and drivers on different spatial scales. The researched focused on the period between 2009 and 2014.

The results highlight various barriers and drivers in the studied contexts. On the national level, the Swedish sociotechnical system for PV deployment has been immature and infested by various institutional barriers. Swedish subsidies for PV deployment have been flawed with uncertainties, complexities and discontinuations, and there have been important uncertainties regarding the future development of the institutional set-up. The results also demonstrate how barriers in different national contexts have been decisive for what kinds of business models for PV deployment that have been viable. On the local level in Sweden, the results show how actors such as local electric utilities and private individuals have influenced homeowners to adopt PV through information dissemination and social influence (peer effects). The results can inform policymakers, firms and other actors as to how to support PV deployment.

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Populärvetenskaplig sammanfattning

Klimatförändringarna är en av vår tids största utmaningar. För att utsläppen av koldioxid ska minska behöver teknologier för förnybar energi snabbt ersätta energi baserad på fossila bränslen. För att olika aktörer – såsom lagstiftare, företag, ideella organisationer och privatpersoner – ska kunna stödja en sådan omställning behövs kunskap om olika hinder och drivkrafter som motverkar respektive främjar (eller skulle kunna främja) spridningen av teknologi för förnybar energi.

Denna avhandling handlar om spridning av *solceller*. Avhandlingens mål är att identifiera och utvärdera hinder och drivkrafter som påverkar hur mycket solceller som installeras. Fokus ligger främst på solcellsanläggningar för privatpersoner i Sverige, vilket i regel innebär solceller placerade på villatak. Trots Sveriges geografiska läge på förhållandevis solfattiga breddgrader finns god potential för användning av solceller även i Sverige. Avhandlingen tar ett socioteknisk systemperspektiv och analyserar samtida hinder och drivkrafter relaterade till regelverk, styrmedel, affärsmodeller, social påverkan och ekonomi. En rad fallstudier genomfördes, och data samlades in genom bland annat enkäter och intervjuer med nyckelaktörer. Genom fallstudier fokuserade på såväl det nationella som det lokala planet bygger avhandlingen kunskap om hinder och drivkrafter på olika geografiska nivåer.

Arbetet genomfördes som fyra delstudier, vilka har publicerats (eller ska publiceras) i vetenskapliga tidskrifter. Den första delstudien tog ett helhetsperspektiv på hinder och drivkrafter på nationell nivå i Sverige. Analysen återger ett underutvecklat socioteknisk system för byggnadsanknutna solceller i Sverige och pekar på en rad problem vad gäller den institutionella stabiliteten. Brister i de ekonomiska styrmedlen har medfört osäkerheter och försämrad investeringsvilja inom installatörsbranschen samt en lång kö för privatpersoner att få ansökningar om bidrag beviljade. Stora osäkerheter har rått vad gäller den framtida utformningen av styrmedel och skatteregler. I vissa fall har det varit oklart hur befintliga regler ska tillämpas då dessa inte varit anpassade för mikroproduktion av elektricitet utan utvecklats för centraliserad storskalig elproduktion.

I den andra delstudien analyserades olika typer av affärsmodeller som nått framgång på tre stora solcellsmarknader (USA, Tyskland och Japan). En affärsmodell är det sätt på vilket företag skapar värde åt sig själva och sina kunder. Studien gick ut på att identifiera faktorer som skiljer sig åt mellan marknaderna och som skulle kunna förklara varför en viss affärsmodell nått framgång på en marknad men inte på en

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annan. De studerade marknaderna skiljer sig åt markant vad gäller vilka typer av affärsmodeller som nått framgång. Till exempel har leasing av solcellssystem varit mycket populärt i USA men nästintill obefintligt i Tyskland och Japan. Resultaten visade på att faktorer som husägares tillgång till kapital, sparkvoter, flyttmönster, egenskaper hos den nationella byggsektorn samt utformning av bidragssystem kan ha ett stort förklaringsvärde. Resultaten kan användas för att stödja spridning av solceller i Sverige och annorstädes, t.ex. genom att informera lagstiftare om hur institutionella hinder mot vissa typer av affärsmodeller kan avlägsnas, eller genom att informera entreprenörer om hur affärsmodeller kan anpassas för olika nationella kontexter.

Den tredje delstudien gick ut på att förklara skillnader i antalet solcellsinstallationer per capita mellan svenska kommuner. Intervjuer med lokala aktörer samt en enkät skickad till personer som skaffat solceller användes för att identifiera lokala faktorer i fem kommuner med särskilt hög solcellstäthet (antal installationer per capita). Resultaten pekar på att den troligen enskilt viktigaste förklaringen till den höga solcellstätheten i de studerade kommunerna är att lokala aktörer aktivt främjat solceller. Framförallt verkar lokala elnätsbolag som marknadsfört och spridit information kring solceller ha haft en stor effekt.

Den fjärde delstudien handlade om social påverkan mellan privatpersoner. En rad utländska studier har tidigare visat att varje ny solcellsinstallation ökar sannolikheten för ytterligare installationer i dess absoluta närhet, vilket indikerar att grannar påverkar varandra att skaffa solceller. Kunskapen om *hur* denna påverkan gått till har dock varit låg. En enkät skickades till solcellsägare, och uppföljande intervjuer genomfördes med utvalda respondenter. Resultaten tydde på att påverkan främst skett genom förhållandevis nära sociala nätverk (mellan släkt och vänner snarare än mellan grannar utan någon närmare relation), samt att den information som förmedlats och som ansetts viktig främst varit en *bekräftelse* på att anläggningen är enkel att använda, levererar elektricitet som förväntat och är driftsäker, samt att inga obehagliga överraskningar är att vänta. Kontakt mellan privatpersoner har således fungerat som ett komplement till professionell rådgivning, där solcellsägande privatpersoner förmedlat en trygghet som ökat deltagarnas benägenhet att skaffa solceller trots att de saknat proffsens detaljkunskaper.

I sin helhet visar avhandlingen på en rad viktiga hinder och drivkrafter för spridning av solceller. Dessa hinder och drivkrafter kopplar till såväl nationella styrmedel och regelverk som till lokala informationsinsatser och social påverkan. Genom att öka kunskaperna om hinder och drivkrafter på olika geografiska nivåer bidrar avhandlingen till bättre förutsättningar för olika aktörer att underlätta spridning av solceller.

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List of papers

This thesis is based on the following four research papers (articles). The full papers can be found at the end of the thesis.

Paper 1:

Palm, A., 2015. An emerging innovation system for deployment of building-sited solar photovoltaics in Sweden. Environmental Innovation and Societal Transitions 15, 140-157.

Paper 2:

Strupeit, L., Palm, A., 2016. Overcoming barriers to renewable energy diffusion: business models for customer-sited solar photovoltaics in Japan, Germany and the United States. Journal of Cleaner Production 123, 124-136.

This paper was produced by my colleague Lars Strupeit and me in close collaboration. As regards research design, the credit goes mainly to Lars. Data collection was split between us, with me responsible for one case (Japan) and Lars for the other two cases. The literature review, data analysis and writing were performed by the two of us in close collaboration.

Paper 3:

Palm, A., 2016. Local factors driving the diffusion of solar photovoltaics in Sweden: A case study of five municipalities in an early market. Energy Research & Social Science 14, 1-12.

Paper 4:

Palm, A., 2016. Peer effects in residential solar photovoltaics adoption – a mixed methods study of Swedish users. Submitted to Energy Research & Social Science.

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1. Introduction

To cope with the challenge of climate change, the need for a transition to a low-carbon energy system is urgent (IPCC, 2014). Such a transition is likely to not only involve the introduction of new energy technologies, but also changes of a more social character, involving institutions, consumption behaviour, knowledge and business models (Geels, 2002; Grübler, 2003; IPCC, 2014; Kemp et al., 1998). Sociotechnical transitions of this kind have occurred several times throughout history in different sectors, but they normally take decades (Grübler, 1996), not only because of the time required to develop and refine new technological artefacts, but also because of various barriers in the sociotechnical environment in which the technology is to be deployed. Not least in the energy sector, such barriers are often severe (Unruh, 2000).

Common barriers to the dissemination of new technology include high costs, technical flaws and poor compatibility with existing infrastructure (Geels, 2002; Grübler, 1996; Kemp et al., 1998). Key reasons that new technology tends to be expensive are that production typically takes place on a relatively small scale, and that processes of learning regarding efficient production are yet to occur (Grübler, 2003; Kemp and Soete, 1992). Long periods of experimentation and learning are typically required to bring down costs and refine the performance of a new technology (Grübler, 2012; Kemp and Soete, 1992; Rosenberg, 1994).

Even after a new technology has reached economic and technical competitiveness, important barriers of a more social character typically remain, obstructing deployment of the technology. Organisational and institutional support for new energy technologies is often lacking, while existing (competing) technologies have built up such support over a long period (Bergek et al., 2008a; Geels, 2002; Grübler, 2012; Hekkert et al., 2007; Unruh, 2000). Existing institutions are often poorly aligned to new, radical innovations as the institutions were often adapted for another technological regime, and incumbent companies with vested interests in preserving the status quo will often use their (superior) financial resources and networks to hold new competitors back, e.g. through lobbying (Unruh, 2000). Besides, consumers tend to be somewhat suspicious of new technologies, and complexities and uncertainties (perceived or real, technical or institutional) can often deter potential adopters (Kemp et al., 1998; Rogers, 1983).

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There is also an important spatial dimension to the dissemination of innovations. Understanding the preconditions for a transition requires an understanding of how different phenomena relate to geographical places and scales (Coenen et al., 2012; Hansen and Coenen, 2015). The spatial dimension of sustainability transitions has, nevertheless, remained underexplored (Coenen et al., 2012; Hansen and Coenen, 2015). For example, local aspects related to consumers and market formation have only been sporadically considered in the transitions literature (Hansen and Coenen, 2015).

There are various strategies that different actors can use to facilitate a transition. Various policy interventions can be used, based on economic instruments, regulatory approaches or information dissemination (IPCC, 2014). Firms can develop innovative business models that fit certain characteristics of a new technology (Bocken et al., 2014; Boons and Lüdeke-Freund, 2013). Information campaigns and lobbying can be run by non-profit organisations or others. Individuals can influence each other through social networks. Such activities can make a new technology disseminate more quickly. To enable different actors to facilitate a transition in an informed manner, a thorough understanding of the sociotechnical system in which the technology is to be deployed is needed.

This thesis is about the deployment of one specific renewable energy technology, namely *solar photovoltaics* (PV). The aim is to identify and assess *barriers* and *drivers* that obstruct and facilitate PV deployment. The thesis takes the *spatial* dimension into consideration, recognising that geographical place and scale might matter in different ways for different barriers and drivers. The scope is limited to the residential sector, i.e. to PV systems situated on the premises of private homeowners. Only grid-connected applications are considered. The thesis adopts a systemic, sociotechnical view of technology deployment, recognising that deployment depends on an interplay between aspects such as institutions, perceptions, social influence, economy infrastructure and artefacts (Bergek et al., 2008a; Geels, 2002; Grübler, 2003; Hekkert et al., 2007; Hughes, 1993; Markard et al., 2012; Unruh, 2000).

The research behind the thesis has been presented to the research community in four papers. Three of them have been published in different peer-reviewed academic journals, and the fourth is under revision. The papers are summarised one by one in section 3, and the full papers are provided as appendices.

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Box 1. Background: PV technology

What is a PV system?

A PV system consists of a number of PV modules and any necessary mounting device, wiring, power inverters etc. Each module consists of a series of solar cells encapsulated into a weather-resistant shell with a transparent surface. PV systems take advantage of the photovoltaic effect, which occurs as the semiconductive material of solar cells is exposed to sunlight.

PV development and dissemination: a brief history

After its invention in the mid-1900s, PV technology found its first significant commercial market in the space industry, where the then high cost of PV was of minor concern. Subsequent niche markets include pocket calculators, early mobile phones, remote transmission stations, parking meters and holiday cottages. As a result of cost reductions and subsidies, the residential rooftop segment gained relevance in the 1990s. Global PV installations came to be dominated by a handful of countries with ambitious subsidy schemes, including Japan, Germany and the United States. In the most recent years, the global PV market has become increasingly geographically diverse.

Technical benefits and challenges of PV

Rooftop PV systems allow adopters to produce and use their own electricity. As the production is close to the user, transmission losses are kept at a minimum. PV technology is highly modular, and PV can feasibly be applied on vastly different scales (from pocket calculators to ground-mounted solar parks). A challenge of PV is intermittency (electricity is produced only when the sun shines), and an increasing share of PV in the power systems might eventually increase the need for load management.

The efficiency of most commercial PV modules in converting solar energy into electricity is around 15%, a figure that has gradually increased from around 6% in the earliest years of PV technology. This figure might not appear too impressive at first glance, but, considering the large amounts of solar energy entering the Earth, it is more than enough from a technical perspective. The global technical potential for electricity generation is several times larger for PV than for biomass or wind power (de Vries et al., 2007).

Although solar cells can be made from a variety of different materials, the world market has been dominated by cells made of silicon, which is the Earth's second most abundant element. The lifecycle greenhouse gas emissions and other externalities of PV systems are normally small in comparison to fossil fuel based electricity generation systems. The energy payback time of silicon-based PV systems under average United States and Southern European conditions is typically around two to three years (Fthenakis and Kim, 2011), and the lifetime of PV modules can be assumed to be 25 years or more (Bazilian et al., 2013).

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1.1. PV deployment: barriers, drivers and space – previous knowledge and gaps in the literature

1.1.1. Barriers and drivers to PV deployment

Residential PV deployment faces substantial challenges, including issues that are general to the deployment of new technologies as well as issues that are more specific to PV, the electricity system and the built environment. While barriers are present throughout the PV value chain, this thesis focuses on barriers at work in the *deployment* phase. Deployment is defined here as the process of putting the technology into use, involving activities occurring at and around the very end of the value chain (see section 1.3 for a more detailed definition).

From a purely technical point of view, PV has been a rather mature technology for decades, performing well in various applications (Jacobsson et al., 2004). However, PV is a radical innovation in the context of national electricity systems and the built environment (Awerbuch, 2000; Schleicher-Tappeser, 2012). Compared to established electricity generation technologies, PV is a disruptive technology as it (a) can be distributed at many points in the electrical grid rather than concentrated to a few large plants, (b) can be located at the user side of the electricity meter, and (c) produces electricity intermittently (only when the sun shines). As a radical technology that requires compatibility with other systems, PV can be expected to face substantial challenges regarding compatibility with existing institutions, practices and infrastructures when deployed in a new context (cf. Kemp et al., 1998). Although there is a fair amount of literature on barriers and drivers to PV deployment, there are various relevant research gaps, of which this thesis addresses a few.

Historically, high costs of PV-generated electricity compared to electricity bought from the grid have been a dominant barrier to residential PV and other grid-connected PV applications (Arvizu et al., 2011; Jacobsson et al., 2004). Only recently have costs of PV technology become low enough for PV to compete in grid-connected applications without subsidies. These cost reductions have largely been the result of learning and economies of scale in the production of solar cells, including input materials (Candelise et al., 2013; de La Tour et al., 2013; Jacobsson et al., 2004; Neij, 2008; Nemet, 2006; Zheng and Kammen, 2014). However, this thesis mainly studies a context (Sweden) in which limited economic profitability has remained a substantial barrier.

To overcome the cost barrier, subsidies to deployment have been a common strategy and an important driver. However, not only the sheer size of subsidies is important, but also various other design aspects. For example, the remuneration can be based

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on the electricity production, total cost or installed capacity of a PV system, creating somewhat different incentive structures (Haas, 2003). Regardless of which strategy is chosen, the literature stresses the importance of keeping subsidies predictable (to reduce uncertainty), user-friendly (to reduce complexity) and dynamic (to be adaptable to external changes). It is crucial to keep the economic profitability (measured for example as the *internal rate of return*, IRR) of investing in a PV system predictable. Remuneration levels should thus be continuously monitored and adapted to changing prices of PV systems (Haas, 2004, 2003; Sandén, 2005). Throughout Europe, insufficient guarantees regarding the continuation of subsidies have been a common problem (Dusonchet and Telaretti, 2010). The potential of subsidies for PV adoption to drive down costs of PV technology has also been stressed, as the subsidies provide the industry with a market in which it can sell its products and thus learn how to produce and deploy PV more efficiently (Jacobsson et al., 2004; Sandén, 2005). There has, however, been a large variation in how subsidies for PV deployment have actually been designed.

An economic barrier that is particularly tangible for PV is the relatively high *upfront* cost. That is, the total lifecycle cost of PV systems is typically highly concentrated to the initial investment. The 'fuel' is free and maintenance costs are low, and although a PV system might be a beneficial long-term investment, prospective adopters might not be able to purchase a PV system due to difficulties in raising the necessary capital (Rosoff and Sinclair, 2009; Yang, 2010). This issue can also deter potential adopters that use a high (explicit or implicit) discount rate.

As costs of PV systems have decreased over time, other barriers than poor economic profitability have gained in relative importance. For example, various complexities and uncertainties (institutional, financial, technical) will often deter potential PV adopters (Karteris and Papadopoulos, 2012; Rai et al., 2016; Rosoff and Sinclair, 2009; Shih and Chou, 2011; Simpson and Clifton, 2015). Examples of specific institutional barriers to PV deployment that have been pinpointed in the literature are a lack of reliable installer certification and standards for technical components and grid-connection (Shrimali and Jenner, 2013; Simpson and Clifton, 2015; Zhang et al., 2015), and long turnaround times and high fees in permitting (Dong and Wiser, 2013; Li and Yi, 2014). Incumbent actors in the electricity sector that have seen their revenues being threatened by the dissemination of residential PV have often tried to influence institutions to counteract PV dissemination, with some (albeit limited) success (Hess, 2016).

Barriers to PV deployment may often be rooted in the electricity and housing systems. Barriers to new technologies tend to be most severe for "systemic technologies that require change in the outside world" (Kemp et al., 1998). For PV to achieve compatibility with buildings and electricity systems, technical and institutional change in these systems might be required. Housing and energy are also

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typically highly regulated, meaning that various legislative barriers might be present (cf. Unruh, 2000). Systems for electricity generation and distribution can be understood as 'large technical systems' of high complexity and inertia (Hughes, 1993). In such systems, existing institutions and infrastructures often interact to obstruct the deployment of new technologies. Legislation and other institutions in the electricity sector have typically been adapted for a technological regime (cf. Geels, 2002) of centralised large-scale facilities (Unruh, 2000). Current energy systems can be understood as being in a state of 'carbon lock-in' caused by "technological and institutional co-evolution driven by path-dependent increasing returns to scale" (Unruh, 2000), impeding radical innovation in the energy sector and conserving the status quo. Furthermore, technological change is typically slower in sectors of long-lived structures (Grübler, 1996). Only rarely does new energy technology replace existing technology through the premature retiring of existing capital stock; thus, the longevity of plants and infrastructures in incumbent energy systems holds back the dissemination of new energy technologies (Grübler, 2012).

In understanding barriers and drivers to PV deployment, it is important to understand the motives for adopting a residential PV system. In developed countries, motives have mainly related to electricity bill savings, reduced environmental impact, energy independence and a general interest in new technology (Rai et al., 2016; Schelly, 2014; Zhai and Williams, 2012). In markets where PV adoption has been a poor economic investment, concern for the environment and an interest in the technology have often been important driving forces for those few adopting PV (e.g. Palm and Tengvard, 2011).

It is recognised that business model innovation (the development of new business models or the adaptation of existing ones) could serve to overcome certain barriers to PV deployment. For example, third-party ownership (TPO) business models can address the high upfront cost of PV systems, bureaucratic hassle and concerns related to operation and maintenance (Overholm, 2015). Research on how different business models for PV deployment relate to different contextual factors has, however, been scarce.

1.1.2. The spatial dimension of PV deployment

Barriers and drivers to PV deployment can be rooted in different places and extend over different geographical scales. The production of PV system components has mainly taken place in other parts of the world than where the technology has been deployed (Huang et al., 2016; Quitzow, 2015), and the part of the value chain where development and production occur has been more global by nature than have processes of deployment. Processes occurring 'upstream' in the PV value chain,

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such as silicon purification and wafer production, are technologically advanced and take place in a global arena. In this part of the value chain, skilled staff has been recruited from around the world and production equipment and produced goods have been traded internationally (de la Tour et al., 2011; Huang et al., 2016). The development of institutions governing the global PV industry has been shaped by an interplay between governments and firms across national borders (Bohnsack et al., 2016). Although the actual production of PV system components and input materials has been concentrated to certain places, the sociotechnical system for the generation of PV system components has thus been rather global by nature. At the subsequent steps down the value chain too, solar cells and modules are traded globally nearly as commodities. As a consequence, cost reduction and technological improvements of PV system components have been globally pervasive, thus directly reducing barriers to PV deployment around the world.

PV deployment is an inherently more local process. Installations must be performed on-site, and the geographical focus of the actors involved typically range from the local to the national scale. Deployment in any given place is typically strongly dependent on formal institutions applying to a limited geographical area (Dewald and Fromhold-Eisebith, 2015; Quitzow, 2015), including subsidies, tax rules, building permits and rules for grid-connection.

The cost and technical performance of PV technology have thus been determined to a great extent by factors beyond the deployment context, operating at other geographical places and scales.

Although PV system installation is in itself a rather straightforward procedure, PV deployment is a complex and systemic procedure involving interaction between various actors, institutions and artefacts (Quitzow, 2015). PV deployment and production could indeed be understood as being different sociotechnical systems with different spatial characteristics, interconnected through certain linkages (cf. Bergek et al., 2015; Markard et al., 2015; Quitzow, 2015; Sandén et al., 2008). For small national deployment markets, the global PV industry could be seen as an 'external force' (cf. Sandén et al., 2008). Deployment could thus be characterised as taking place in sociotechnical 'sub-systems' (national or regional PV markets) to a global sociotechnical system for PV technology. The geographical reach of these sub-systems is presumably defined to a great extent by national borders, as the nation state is a natural upholder and enforcer of formal institutions. Although the aggregate of these sub-systems is what fuels (and is fuelled by) the global production system for PV system components, the individual sub-systems are often too small to substantially influence the global system (a counterexample is the domination of the German PV market on global demand in the early 2000s (Quitzow, 2015)).

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Conventional methods for analysing technological transitions have suffered from a lack of attention to geographical aspects of the kinds described above (Coenen et al., 2012; Raven et al., 2012). The most widely used sociotechnical system approaches to understanding sustainability transitions are *technological innovation systems* (TIS) and the *multi-level perspective* (MLP) (Coenen et al., 2012; Coenen and Díaz López, 2010; Markard et al., 2012; Markard and Truffer, 2008; Weber and Rohracher, 2012). These approaches have been developed and conventionally applied to consider processes of technology development and deployment together as belonging to one and the same system. However, neither of them has been very explicit on how to deal with spatial division of labour of the kind occurring in the PV value chain (Coenen et al., 2012), although some development has occurred in this regard in parallel to the work with this thesis (Hansen and Coenen, 2015).

As stated, PV technology is mature regarding technical performance, and is reaching cost competitiveness in an increasing number of regions. Meanwhile, there are numerous potential national and regional markets around the world where PV penetration is (still) very low. These markets can be seen as potential catching-up markets, into which PV technology could be imported and deployed relatively swiftly if their internal barriers to deployment are not too severe. The potential global aggregate for PV uptake in such markets is huge, and it is thus important to understand barriers and drivers to deployment in these markets. Research on barriers and drivers to PV deployment in catching-up markets has, however, been scarce.

Various factors of a more local nature have been found to influence PV adoption rates, such as local variations in solar insolation, electricity prices (Kwan, 2012) and rules and procedures for permits, grants and grid-connection (Brudermann et al., 2013; Dong and Wiser, 2013). There is also some evidence that local organisations can overcome barriers to deployment by promoting PV through campaigns, information provision, lobbying or demonstration projects (Brudermann et al., 2013; Dewald and Truffer, 2012; Noll et al., 2014; Owen et al., 2014). As argued by Noll et al. (2014), such local initiatives are likely to have the largest impact on PV adoption rates if residential PV adoption is neither highly profitable nor clearly unprofitable. As financial aspects are neither the dominant driver nor a major barrier in such situations, the argument goes, there is more opportunity for information campaigns or seminars to make a relative difference in driving adoption rates. However, the understanding of what factors can explain local variation in PV adoption rates has been limited.

A driver with an often inherently large local component is social influence between peers, also referred to as *peer effects*. Positive word of mouth often plays an important role in overcoming barriers to the diffusion of innovations (Rogers, 1983). This is particularly true in situations where the support of a strong brand or strong marketing resources are lacking, which is often the case for small companies

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marketing radical innovations (Mazzarol, 2011). A number of recent studies have attempted to quantify local peer effects in terms of increased probability of additional nearby PV adoptions following previous adoptions (Bollinger and Gillingham, 2012; Graziano and Atkinson, 2014; Graziano and Gillingham, 2014; Müller and Rode, 2013; Rai and Robinson, 2013; L.-L. Richter, 2013; Rode and Weber, 2013). The results indicate that peer effects are stronger down to the zip code or street level (e.g. Bollinger and Gillingham, 2012). Some early attempts have also been made to separate *active* (through direct interpersonal contact) and *passive* (through passively observing PV systems) peer effects, although the results have remained rather inconclusive (e.g. Rai and Robinson, 2013). Pre-existing research on peer effects in PV adoption has focused on estimating the sheer magnitude of the effects, and the qualitative perspective has been lacking. The actual mechanisms underlying the peer effects have thus remained poorly understood.

There is some evidence that local organisations can take advantage of peer effects to reduce barriers to adoption. The findings of Noll et al. (2014) suggest that local non-profit organisations promoting residential PV in the U.S. have managed to leverage the impact of their activities through peer effects by engaging local individuals. A better understanding of how peer effects actually work could potentially inform organisations in how to exploit peer effects to boost PV uptake.

1.2. Objective

The objective of this thesis is to advance the knowledge on *the deployment of residential PV systems*. More specifically, the thesis aims at identifying and assessing *barriers* and *drivers* that obstruct or facilitate PV deployment in different geographical settings, taking the spatial dimension into account. Barriers include any factors in the sociotechnical system surrounding PV deployment that obstruct the deployment process, thus reducing the rate of PV adoptions. Correspondingly, drivers are sociotechnical factors that facilitate PV deployment, thus increasing adoption rates. Such barriers and drivers may relate to for example institutions, firms, economy, human behaviour, infrastructure or technology. Studying different national and local contexts, the thesis aims at building knowledge on barriers and drivers on different spatial scales. The thesis aims at answering four different research questions, one for each paper:

- RQ1 (paper 1): What barriers are present in the Swedish sociotechnical system for residential PV deployment?

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- RQ2 (paper 2): How have different kinds of business models been successfully designed by firms to overcome country-specific barriers to residential PV deployment in different national contexts?
- RQ3 (paper 3): What local factors can explain geographically uneven adoption rates (as measured on the municipal level) of residential PV systems within Sweden?
- RQ4 (paper 4): How has social influence between peers (peer effects) reduced barriers to PV adoption among Swedish homeowners?

The thesis is largely based on case study methodology. Important modes of data collection were interviews and surveys, although data were gathered in various other ways as well. Both qualitative and quantitative methods were used.

The target audience includes actors that might have an interest in stimulating PV dissemination. These include policymakers, firms and non-profit organisations.

1.3. Scope

This thesis focuses on a particular part of the PV value chain, namely on *deployment*. Deployment is defined here as the process of putting the technology into use, and involves various activities taking place at and around the very end of the PV value chain, such as PV system marketing, sales, installation and adoption decision making among (potential) users. Deployment is thus the last set of processes in a series of events that lead to a PV system being commissioned. Processes taking place further upstream in the value chain, such as technology production and development, are outside the scope.

Although the terms 'deployment' and 'dissemination' are often used interchangeably, 'deployment' is in this thesis used to signal that it is activities at the end of the value chain that are alluded to. The term 'dissemination' is used here to describe the increased uptake of an innovation (e.g. the number of PV systems per capita) without alluding to any particular part(s) of the value chain. Dissemination is thus regarded here as an outcome of the combination of technology development, production and deployment.

With a focus on deployment, there is little reason to delimit the scope to PV systems based on any particular kind of solar cells. Although crystalline silicon solar cells dominate PV markets worldwide, other kinds of solar cells are in principle not excluded from the analysis. Other cell types can be produced with very different methods using different materials, but once encapsulated into modules they can typically be treated more or less as equivalents for residential applications. The

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deployment focus thus allows the researcher to regard PV modules as 'black boxes' converting sunlight into electricity regardless of the characteristics of its internal processes.

As regards different applications, the focus is on the *residential* segment, i.e. on systems situated in connection to and providing electricity to a particular household. Thus, larger ground-mounted installations, industrial applications and most applications on multi-family dwellings are not considered. Although people renting their homes are in principle not excluded, the current state of affairs in PV markets around the world (including the studied contexts) implies that the adopter category of interest is that of private homeowners.

Regarding *geography*, most of the research focused on Sweden, either the whole country (paper 1) or more local entities (papers 3 and 4). Only in paper 2 was the focus on markets outside Sweden, namely Germany, Japan and the United States. Paper 2 does, nevertheless, provide important lessons for Swedish actors regarding the future development of the Swedish market as this paper studies more developed markets. Papers 3 and 4 differ from the other papers in that they have a *local* focus. All research was conducted in developed countries only. Practically all households in the studied contexts are connected to the electrical grid, and the thesis thus considers grid-connected PV applications only.

Sweden was chosen as the main setting for three key reasons. First, residential PV as an investment in Sweden has been neither clearly unprofitable nor very profitable in recent years. When PV adoption offers limited (but not too poor) prospects of economic gains, various non-economic factors are presumably more likely to have a relatively high impact on adoption rates (cf. Noll et al., 2014), which makes such factors more easily observable. This makes Sweden a potentially fruitful case for studying non-economic barriers to deployment. Second, there has been a lack of research on barriers to PV deployment in catching-up markets. The aggregate of (potential) catching-up PV markets around the world offers a huge potential for PV uptake, and understanding barriers in such contexts is thus of utmost importance. Third, data for Sweden were relatively accessible as the researcher was based there and is a native speaker of the language. Paper 2 went outside the Swedish context because there was not enough empirical data to be found on the topic of interest (business models for PV deployment) within Sweden. A better understanding of business models can nevertheless be useful to support PV deployment in Sweden and other catching-up markets.

Regarding *time*, the research focuses mainly on phenomena that occurred between 2009 (when a subsidy for residential PV was launched in Sweden) and 2014. During that period and up until the time of writing this chapeau (late 2016), the studied PV markets, as well as other PV markets around the world and the global PV industry, have developed substantially. There is, nevertheless, little reason to believe that the

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findings of this thesis (with perhaps some minor exceptions) are less relevant at the time of finishing the thesis than a few years earlier. First, as observed by the researcher, most of the barriers to deployment in Sweden identified throughout the research remain at the time of finishing the thesis and are thus still relevant targets for policy. Second, even if the studied contexts have changed, there are numerous markets around the world that will likely face challenges similar to those encountered in the studied cases, and that can learn important lessons from them.

All papers except paper 4 adopt a systemic perspective in their respective context, considering a variety of interacting factors in PV deployment. Paper 4, being narrower in scope, focuses exclusively on social influence between peers in PV adoption.

1.4. Limitations

Some limitations of this thesis need to be recognised. First, the generalisability (external validity) of the findings is limited by the fact that the bulk of the research was focused on the Swedish context. Generalisability might be largest to similar cases, e.g. to developed countries with PV markets that are in an early stage of development and where the economic profitability of adopting a PV system is limited.

Second, the perspectives of all relevant actors are not always present. Due to restrictions in time available to the researcher, primary data could not be collected through interviews or surveys for all actors but were collected only from actors that were deemed the most relevant. In paper 1, the actors interviewed were general experts, installers and electricity companies, while primary data were not gathered for adopters and policymakers. In paper 2, primary data were obtained from companies using the business models of interest and from industry experts, but not from the companies' customers or from companies using other business models. Also in paper 3, a deeper understanding could possibly have been obtained through interviews with adopters that responded to the survey.

Third, the number of cases in the comparative case studies (papers 2 and 3) was constrained by limitations in the amount of time available to the researcher rather than by theoretical saturation (cf. Glaser and Strauss, 1967). With more cases added, the internal and external validity could have been increased, and additional insights could potentially have been reached.

Fourth, data could have been gathered to support more elaborate statistical analyses. For paper 3, data could have been collected to perform statistical analyses comparing a larger number of municipalities with regard to how various aspects

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correlate with PV adoption rates. For paper 4, a larger sample with secured representativeness would have made more elaborate statistical analyses possible.

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2. Methodology

This section starts with a description of three theoretical frameworks that were used to guide the research. Then, the overall research design, which is based on case studies and various methods for data collection and analysis, is presented. Lastly, the interdisciplinary nature of the research is discussed briefly.

2.1. Theoretical frameworks

The research conducted for this thesis was guided by a variety of theoretical frameworks and concepts. However, three theoretical frameworks were particularly important. The rationale for choosing these frameworks is described below, after which the frameworks are outlined one by one.

As the thesis aims at identifying barriers and drivers throughout sociotechnical systems for PV deployment, the theoretical framework, or set of frameworks, used must reflect the 'whole' system. There are existing frameworks that fit this purpose quite well. In particular, the *technological innovation systems* (TIS) framework (e.g. Bergek et al., 2008a; Hekkert et al., 2007) and the *multi-level perspective* (MLP) (e.g. Geels, 2002) have been developed to analyse the development and deployment of new technologies from a sociotechnical systems perspective. These two frameworks have become dominant as analytical tools to understand (various barriers and drivers to) sustainability transitions, and, even though they have been developed rather independently of each other, they are largely focused on the same real-world phenomena and share several key concepts (Coenen et al., 2012; Markard and Truffer, 2008). Although these frameworks were not developed for any particular technology or sector, they have very often been applied to renewable technologies in the energy sector (Markard et al., 2012; Markard and Truffer, 2008).

Yet, there are differences between these two frameworks. The TIS framework is apt for studying barriers and drivers at different stages of a technology's development (Bergek et al., 2015, 2008a; Markard et al., 2012), while the MLP framework is relatively more focused on niche applications *or* regimes and less so on intermediate stages of development (Markard and Truffer, 2008). The MLP framework is more apt to explain broader transformative changes than the TIS framework, which is

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more focused on technology-specific matters (Markard et al., 2015; Weber and Rohracher, 2012). These differences hint that the TIS framework might be a more appropriate choice for the purpose of studying the deployment of a mature technology (PV) in an application that is not to be considered a niche (the residential application) but that has become mainstream in other geographical contexts and is expected to become mainstream also in the country or region of interest. Thus, the thesis uses the TIS framework as a starting point to analyse barriers to PV deployment (paper 1).

The wide scope of the TIS framework implies that it is not as detailed in all parts of the studied sociotechnical system. To further understand barriers and drivers to PV deployment, papers 2-4 analyse specific parts of the deployment systems. The research designs of papers 2-4 thus required the identification of the most relevant parts of these systems, as well as the identification or construction of theoretical frameworks that zoomed in on these parts.

Ideally, the TIS framework would provide adequate guidance to other frameworks that could be applied when studying certain phenomena in greater depth. This is the case for some phenomena that are within the scope of the TIS framework; for example, the TIS framework assigns significant importance to institutions, and accordingly the TIS literature refers to central literature on institutional theory, particularly to literature that deals with relationships between institutions and technological change. However, when it comes to other phenomena that occur in the TIS framework, such as the different actors involved in technology deployment and some of the 'functions' (key processes), the TIS literature does not connect as well to other literature streams. Neither does it provide guidance to any subsystems that might be analysed.

A useful analysis has, nevertheless, been performed by Foxon (2011), who identified a set of key coevolving systems relevant when analysing sustainability transitions, namely *ecosystems*, *technologies*, *institutions*, *business strategies* and *user practices*. Of these systems, *ecosystems* are regarded as external in this thesis. Also *technologies* are largely regarded as an external force, as the focus is on the deployment of artefacts that are in themselves technically mature and imported from another system. *Institutions* are crucial to a systemic analysis of barriers to deployment but are, as stated, quite well covered by the TIS framework, and paper 1 accordingly provides a thorough institutional analysis. Thus, potential areas for further studies remaining after the completion of paper 1 are *business strategies* and *user practices*. Business strategies have also been identified as crucial in bringing sustainable products to the market within the *business models* literature (Bocken et al., 2014; Boons and Lüdeke-Freund, 2013; Mont et al., 2006; Reim et al., 2015; Tukker, 2004). Furthermore, Schot et al. (2016) have made a strong case for dealing in greater depth with the role of users in the technological transitions literature.

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Suitable frameworks for studying business strategies and user practices are the *business models framework* (Amit and Zott, 2001; Shafer et al., 2005) and Rogers' (1983) *diffusion of innovations* framework, respectively. Thus, these frameworks were used for papers 2-4. These frameworks fit within the scope of the TIS framework as they zoom in on real-world phenomena covered by the TIS literature. Both frameworks could be positioned relatively easily within the TIS literature as they clearly relate to core TIS concepts. What the TIS framework intends to capture by stressing the importance of firms and the function 'entrepreneurial experimentation' has a large overlap with what is described in the business models literature. The business models literature, being solely devoted to this topic, is nevertheless much more detailed on the phenomena of interest. In a similar manner, the role of users and the functions 'legitimation', 'knowledge development and diffusion' and 'market formation' of the TIS framework have a large overlap with what is dealt with in Rogers' diffusion of innovations framework.

2.1.1. Framework 1: Technological innovation systems (TIS)

The technological innovation systems (TIS) framework was developed to analyse the development, production and deployment of new technologies from a sociotechnical systems perspective (Bergek et al., 2008a; Hekkert et al., 2007). Its most common application has been to identify and assess barriers and drivers to technology dissemination in order to derive policy recommendations, often with the purpose of understanding how increased uptake of renewable energy technologies could be supported (e.g. Dewald and Truffer, 2011; Dewald and Fromhold-Eisebith, 2015; Jacobsson and Bergek, 2011; Quitzow, 2015; Sandén et al., 2008; Suurs, 2009; Suurs and Hekkert, 2009).

The TIS literature is a branch of a wider innovation systems literature, including other innovation systems approaches such as *national*, *regional* and *sectoral* innovation systems. An innovation system belonging to any of these categories can be understood as a complex system of actors and institutions involved in the development, production and deployment of new technology. Originally, the innovation systems literature focused on *national* innovation systems, which are not restricted to one particular technology but deal with the general innovative capability of a country (Lundvall, 2010). Subsequently, literature emerged on sector-specific innovation systems (Malerba, 2009) and, narrowing down, on innovation systems for specific technologies – that is, on TISs. The innovation systems literature emerged largely as a result of a frustration among certain scholars regarding how (mainstream) economics dealt with economic development; the argument was that it neglected processes of learning, institutions and technological change, and wrongfully assumed a static equilibrium (Sharif, 2006).

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The rate and direction of technological change can be understood as being determined more by competition between innovation systems than between technologies (Hekkert et al., 2007). A major external force of a TIS for PV deployment is the incumbent system for electricity production, which could be understood as a sectoral innovation system, or as a sociotechnical *regime* (Geels, 2002). As stated, such incumbent systems/regimes could be expected to be locked in through various technological and institutional mechanisms, making it difficult for new and competing technologies to gain ground (Unruh, 2000).

In this thesis (paper 1), the TIS approach was used somewhat differently than in most previous TIS studies as it was applied to the *deployment* phase exclusively. Earlier TIS studies (as most other innovation system studies) have been predominantly used to study processes of development, production and deployment together as occurring in one and the same system, or they have paid less attention to deployment than to development and production (Dewald and Truffer, 2011). However, due to spatially different characteristics between different parts of the PV value chain (see section 1.1.2), a pure deployment focus was deemed the most appropriate for the present research (see also section 2.1.1.3).

In recent (post-2007/2008) TIS literature (Bergek et al., 2008a; Hekkert et al., 2007), a TIS is normally divided into one 'structural' and one 'functional' (more dynamic) part. These are outlined below, and it is briefly explained how they may relate to technology deployment. A brief account of how to think about geographical system boundaries in relation to the value chain follows, as this was an important issue in paper 1.

2.1.1.1. The structure of a TIS

The 'structure' of a TIS is normally thought of in terms of the following three categories of elements:

- *Actors*: Any organisations or individuals relevant for the development or deployment of the technology. With a deployment focus, core actors include, for example, installers and suppliers of turnkey systems and components, policymakers and (potential) adopters.
- *Networks*: Linkages between actors through which information is exchanged. In deployment, associations for installers and suppliers are frequently of high importance, as well as informal networks between adopters. Advocacy coalitions may attempt to influence policy though political networks (Bergek et al., 2008b).
- *Institutions:* Any humanly devised rules (formal or informal) affecting the development or deployment of the technology, such as laws, standards, practices or collective mind frames. For deployment, technology standards

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(Ma, 2010) and popular perceptions (legitimacy) (Jacobsson and Bergek, 2004) are examples of institutions that are often important. Although institutions often facilitate deployment, pre-existing institutions may also prohibit or complicate the deployment of a new technology, often unintentionally.

While a TIS is in its early stages, the institutional set-up is usually badly aligned to the emerging technology as institutions are either not in place or are maladapted to the technology. The alignment of institutions to new technology is, however, notoriously an arduous process (Unruh, 2000), further complicated by the fact that firms "compete not only in the market but also over the nature of the institutional set-up" (Bergek et al., 2008a), a competition in which incumbent firms are often in a stronger position than the small newcomers that might represent the new technology. Furthermore, key actors might be missing or might not have gained the relevant knowledge, and networks are often lacking.

With a focus on deployment, these three categories of structural components are all likely to be as important as when the TIS framework is used to study development and deployment together. However, the deployment focus allows the researcher to focus his or her resources on those actors, networks and institutions that are the most relevant for deployment, thus creating room for a more in-depth analysis of those elements.

2.1.1.2. Functions of a TIS

Functions represent key processes that should occur in a TIS in order for the system to perform well. Functions have been described as constituting "an intermediate level between the components of a [TIS] and the performance of the system" (Jacobsson and Bergek, 2004) and as "emergent properties of the interplay between actors and institutions" (Markard and Truffer, 2008). The exact number of functions that should occur is somewhat arbitrary, and various sets of functions have been presented. The following set has (with some variation) gained recognition in the recent TIS literature (Bergek et al., 2008a; Hekkert et al., 2007):

- *Knowledge development and diffusion*, encompassing different processes of learning among key actors. As regards deployment, firms, policy makers and (potential) adopters need to gain an understanding of how to install, market, regulate, support and use the technology.
- *Guidance of the search*, capturing incentives for firms and other organisations to enter and participate in the TIS. The strength of this function is to a great extent determined by present and future *market formation* (see below) as perceived by relevant actors, not least when it comes to the deployment phase.

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- *Entrepreneurial experimentation*, including various creative activities of firms. As regards deployment, innovation and variation regarding what applications and business models are employed can be important indicators of the strength of this function.
- *Market formation*, referring to activities that contribute to the creation of demand for the technology. Market formation is a crucial part of the deployment process and a prerequisite for dissemination. Barriers to market formation are often found in the institutional set-up (for example as a lack of standards or misaligned legislation) or in a poor price/performance.
- *Legitimation*, referring to changes in the social acceptance of a technology, or how good or desirable the technology is perceived to be. Legitimation through lobbying performed by activists and interest organisations was decisive for the implementation of deployment supporting schemes for PV in Germany (Bergek et al., 2008a; Jacobsson and Lauber, 2006).
- *Resource mobilisation*, reflecting the availability of human and financial capital necessary for the TIS to perform well. As regards the deployment of renewable energy technologies, the mobilisation of capital for subsidy schemes has often been crucial.

By identifying and strengthening poorly performing functions, policy interventions can facilitate the dissemination of a desirable technology (e.g. a renewable energy technology). This can be achieved by strengthening or adding drivers, or by weakening or removing barriers (Bergek et al., 2008a).

The functions have often been used to study feedback loops between production and deployment. When the TIS framework is applied to the deployment phase exclusively, such feedback loops will not be made visible. With a deployment focus, there is also a possibility that the relative importance between functions might differ from when the TIS framework is applied to a larger part of the value chain, as some functions might be more directly related to earlier stages of the value chain and others to deployment processes (e.g. 'market formation').

2.1.1.3. The spatial dimension and the case for deployment-focused TIS studies

Setting spatial system boundaries in TIS studies can be more or less complicated depending on the case at hand. While some technologies have their value chain assembled more or less entirely within one single country, others have their value chain distributed over different geographical places and scales. As stated by Hekkert et al. (2007), a technology is "hardly ever embedded in just the institutional infrastructure of a single nation or region, since – especially in modern society – the relevant knowledge base for most technologies originates from various geographical

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areas all over the world". The question of what part(s) of the value chain that are in focus thus has implications for the choice of spatial scope of the study.

A need for more elaborate approaches to geographical system boundary setting and spatial differentiation in TIS studies has been identified in recent publications (Binz et al., 2014; Coenen et al., 2012). The general trend towards increased global division of labour and specialisation in value chains (Antràs et al., 2012; Baldwin and Robert-Nicoud, 2014; Hummels et al., 2001; Los et al., 2015; Timmer et al., 2013) suggests that this need, if anything, will increase as technologies increasingly have their value chains distributed over different geographical places and scales. In parallel to the work with this thesis, empirical and conceptual work has been carried out by other scholars to make the TIS framework more elaborate regarding spatial differentiation (Bergek et al., 2015; Binz et al., 2014; Dewald and Fromhold-Eisebith, 2015; Gosens et al., 2015; Huang et al., 2016; Quitzow, 2015; Wieczorek et al., 2015). Empirical studies using geographically differentiated TIS approaches have been performed for PV (Dewald and Fromhold-Eisebith, 2015; Quitzow, 2015), membrane bioreactors (Binz et al., 2014) and wind power (Wieczorek et al., 2015). A spatially differentiated TIS analysis, in which deployment and production are treated as (partly) different sociotechnical systems between which linkages exist, has been proposed in recent publications (Bergek et al., 2015; Dewald and Fromhold-Eisebith, 2015; Quitzow, 2015). Such analyses could often be useful, but they are resource-intensive as the researcher has to gather and analyse data from different contexts. It is thus important that the researcher knows what to focus his or her resources on and what can be left out of the analysis. Thus, there is a case for elaborating upon whether and under what circumstances the TIS framework can be applied to deployment exclusively, treating technology development and production as a 'black box'.

PV is an example of a technology whose whole value chain does not naturally fit into one and the same geographically defined TIS. As described in section 1.1.2, the development and production of PV system components take place in a global arena, and this part of the value chain is thus better understood as pertaining to a global TIS (although it might, for pragmatic reasons, make sense to define a national TIS for these processes if the purpose is to derive policy recommendations for a particular government), while the deployment of PV is an inherently much more local activity. This can make it somewhat problematic to attempt to squeeze development, production and deployment of PV into one and the same TIS, although the TIS framework is originally intended to study all these processes together. In paper 1, this dilemma was elaborated upon, and it was demonstrated that the TIS framework is useful to study deployment separately in cases where it does not make sense to include more upstream parts of the value chain in the same TIS as deployment.

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Two macro trends hint that TIS analyses focused on deployment will be increasingly needed. First, an increasing global division of labour and specialisation suggests that the production and trade of artefacts will increasingly take place in a global arena, while processes of deployment may remain more localised (which has been the case for PV, see section 1.1.2). In those cases, individual end user markets will often be small in relation to the global production system, and a pure deployment focus in TIS studies may be feasible. Second, there is an increasing availability of mature renewable energy technologies that can be deployed in new regions. This availability creates a case for more deployment-focused TIS analyses to study barriers and drivers in these catching-up markets, thus informing actors in how to facilitate a sustainability transition. Furthermore, as technologies mature, their global production systems are likely to increase in size in both absolute terms and in relation to more localised deployment systems, in which case it can be feasible to treat technology development and production as a 'black box' in relation to deployment.

2.1.2. Framework 2: Business models

In order for a technological transition to take place, not only technical but also organisational innovation is required. Not least *firms*, who are usually key actors in technology deployment, might need new strategies to overcome barriers to the deployment of radical innovations. In order to profit from a new technology, firms will often need new strategies for how to provide value for their customers and capture value for themselves – that is, new *business models* are needed. In paper 2, an analysis was made of why different kinds of business models for PV deployment have reached success in different national contexts.

A business model is, simply put, a representation of how firms create value for themselves and their customers. Customers may be private individuals, other firms or other organisations, and value may be provided in the form of services, products or a combination of both. In two widely cited papers, business models have been described as "the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities" (Amit and Zott, 2001), and the "firm's underlying core logic and strategic choices for creating and capturing value within a value network" (Shafer et al., 2005). The business models concept became prevalent around the mid-1990s in connection with the rise of the Internet (Shafer et al., 2005; Zott et al., 2011). A deployment focus is common in business model analyses, although focus can equally well be on products that are to be further processed before a finished product can be deployed.

Although there is no precise, agreed definition of a business model, the following elements are central to most definitions (M. Richter, 2013):

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- *Value proposition:* the products or services offered to customers.
- *Customer interface:* the overall interaction with customers, including customer relations, customer segmentation and distribution channels.
- *Infrastructure:* the company's inner structure for value creation, including assets, know-how and partnerships.
- *Revenue model:* the relationship between the costs and revenues of the value proposition.

It is recognised in the literature that business model innovation (the development of new business models or the adaptation of existing ones) can facilitate the deployment of new technologies (Boons and Lüdeke-Freund, 2013). A new technology might not only come with some inherent attributes that call for a new or changed business model, but also the newness in itself might entail barriers that could be addressed through business model innovation. Uncertainties and incompatibilities with existing institutions could potentially be addressed through business models designed to transfer risks and transaction costs from the customer to the company, or to neutralise particular institutional barriers.

In the present thesis (paper 2), the analysis went beyond the conventional business models framework to also consider various contextual country-specific factors. This allowed the research to identify how various barriers have influenced the viability of different business models for PV deployment in different geographical contexts.

2.1.3. Framework 3: Diffusion of innovations

In the *diffusion of innovations* literature, the (potential) adopters are in focus, as well as those influencing or trying to influence their decision to adopt or reject an innovation. Thus, this framework is deployment-focused by nature, although it does not capture the full set of actors (or other factors) relevant for deployment. This section outlines the diffusion of innovations framework as presented by Rogers (1983). Rogers' framework gathers insights from a broad set of literature and has gained wide recognition. His main contribution was to put existing research together into a comprehensible yet robust package. The framework is by no means restricted to sustainability innovations or innovations in the energy sector, but is general to innovations that are or can be adopted by individuals. Elements of the diffusion of innovations framework were used throughout this thesis, particularly in papers 3 and 4.

Rogers (1983, p. 5) defined diffusion as *"the process by which an innovation is communicated through certain channels over time among the members of a social system"*. The framework focuses on processes of decision making, how different

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personality types relate to the inclination to adopt an innovation, and how different attributes of innovations might influence their adoption rates. Rogers used the terms 'diffusion' and 'dissemination' interchangeably. In this thesis, 'dissemination' is used as a general term for the uptake of an innovation (e.g. in terms of adoption rates), while 'diffusion' is used for processes more specifically related to communication or exchange of ideas, or to signal adherence to the work of Rogers. In this thesis, 'diffusion' differs from 'deployment' in that 'deployment' involves more aspects than just interpersonal communication (the difference between 'dissemination' and 'deployment' has been accounted for in section 1.3).

A key feature of the framework is the categorisation of potential adopters by some key characteristics and their role in diffusion processes. Rogers promotes a categorisation of potential adopters into five ideal types (although he concedes that in reality there are no sharp boundaries between these groups):

- *Innovators* are the first to adopt innovations. The innovator is venturesome and eager to try new ideas, leading him or her to seek social relationships with other like-minded outside their local peer group. Innovators are often seen upon with some suspicion by their peers, being perceived as 'too' innovative, but they can still facilitate the diffusion process by bringing new ideas into their social system.
- *Early adopters* are somewhat less innovative than innovators. They are more integrated into their local social system than innovators, and are more influential on the attitudes of their local peers. Being both relatively respected and innovative (but not *too* innovative), they are effective role models and have the highest level of *opinion leadership* (see below) among the categories.
- The *early majority* adopts innovations just slightly earlier than the average individual. This group is an important link between early and late adopters, providing interconnectedness supporting the diffusion process. Once a person belonging to this category has started contemplating adoption, his or her decision period is longer than that of earlier adopters.
- The *late majority* adopts innovations slightly later than the average individual. Adoption often comes as the result of economic necessity or social pressure. Persons in this category tend to maintain a sceptical attitude towards new ideas in general, and practically all uncertainty about the innovation must have disappeared before they choose to adopt.
- *Laggards* are the last to adopt an innovation. They are suspicious of new ideas, and their attitudes are often aligned with the practices of previous generations. Often, however, a precarious economic situation is a partial reason for the late adoption.

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The decision to adopt (and keep using) an innovation is described by Rogers as an *innovation-decision process* consisting of the following five stages:

- *Knowledge,* in which awareness of the existence of the innovation and understanding of how it works are gained.
- *Persuasion*, in which a favourable or unfavourable attitude towards the innovation is formed.
- *Decision*, involving activities leading to a choice regarding whether to adopt or reject the innovation.
- *Implementation*, in which the innovation is put into use.
- *Confirmation*, in which reinforcement of an earlier adoption decision is sought, sometimes leading to a reversal of the adoption.

Innovations have different *attributes*, which are highly influential on the rate at which they diffuse in a social system. Attributes can be generalised into the following five categories, which, according to Rogers, taken together normally explain most of the variance in the rate of adoption between innovations:

- *Relative advantage* as compared to existing alternatives. In the case of residential PV, the existing alternative would for most prospective adopters be electricity from another source or another financial investment.
- *Compatibility* with for example norms, beliefs and infrastructure. As an example, residential PV benefits from a widespread belief in the perils of climate change, but may be in conflict with permitting or tax rules.
- *Complexity* as perceived by potential adopters. Although residential PV systems are typically relatively easy to acquire and use (at least from a technical point of view), potential adopters might perceive adoption and use as potentially complicated.
- *Trialability*, reflecting the possibility of testing the technology before adopting it. Residential PV suffers from low trialability, as a PV system cannot easily be installed and uninstalled for testing on a rooftop.
- *Observability*, being the extent to which members of a social system can observe the results of an adoption. While residential PV has a high observability in terms of *awareness* (neighbours will normally notice when someone has installed a rooftop PV system), lower observability of the actual results of PV adoption (production, economy, reliability) might be a disadvantage.

A key concept in papers 3 and 4 is that of 'peer effects', which captures social influence between peers (e.g. neighbours, co-workers or friends) in the adoption

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decision process. Although Rogers did not use this particular term, much of his framework is, as should be evident from the above account, dedicated to this topic. Peer effects can be *active* (occurring through direct communication between peers) or *passive* (occurring without direct communication, for example when someone observes a new PV installation in their neighbourhood) (e.g. Rai and Robinson, 2013). Peer effects have been observed in the adoption of a variety of technologies, such as menstrual cups among Nepalese adolescents (Oster and Thornton, 2009), electric vehicles (Axsen et al., 2009), information and communication technologies (e.g. Stewart, 2007), housing renovation (Helms, 2012) and various kinds of farming equipment (Rogers, 1983). Peer effects are often highly localised (Rode and Weber, 2013), and local peer effects for residential PV systems have been quantified in a number of recent studies (Bollinger and Gillingham, 2012; Graziano and Atkinson, 2014; Graziano and Gillingham, 2014; Müller and Rode, 2013; Rai and Robinson, 2013; L.-L. Richter, 2013; Rode and Weber, 2013). There has, nevertheless, been a lack of qualitative research on peer effects in PV adoption, and consequently the understanding of the underlying mechanisms of peer effects in PV adoption has remained poor. This gap was addressed in paper 4.

2.2. Research design

The research was mainly based on case studies carried out using qualitative methods. Data were collected through a variety of methods, including interviews (all papers), surveys (papers 3 and 4) and comprehensive internet searches (all papers). Both primary and secondary data (academic and non-academic) were used (secondary data were relatively more important for papers 1 and 2). In this section, the case study approach(es) adopted and the methods for data collection and analysis are outlined. (For a more detailed account of the research designs of each paper, see section 3 or the appended papers.)

2.2.1. Case studies

The thesis is largely based on *case studies*, i.e. empirical in-depth inquiries in single settings (Eisenhardt, 1989; Yin, 2009). Case studies are suitable to shed light on 'how'- or 'why'-questions regarding contemporary phenomena over which the researcher has little or no control (Yin, 2009). Case studies can be based on qualitative or quantitative methods, or a combination of both, and they normally make use of a variety of evidence, including documents, artefacts, interviews, and observations (Eisenhardt, 1989; Yin, 2009). Case studies are generalisable to

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theoretical propositions rather than to populations, and one of their important strengths is to explain causal links in complex situations (Yin, 2009).

Case studies can be based on one or more cases, which should be selected on the basis of their expected ability to provide useful information rather than to provide a representative sample of a larger universe (Eisenhardt, 1989; Yin, 2009). If the number of candidates for cases to study exceeds about a dozen, quantitative data should be collected about the cases and pre-defined criteria should be specified to select a smaller number (Yin, 2009). This strategy was adopted for paper 3.

For papers 1-3, a clear-cut case study approach was adopted, while paper 4 employed elements of case study methodology. Paper 1 was carried out as a single-case study to identify and assess barriers and drivers within one particular setting (Sweden as a whole). Papers 2 and 3, on the other hand, used multiple-case approaches to support generalisations by means of comparison between different settings.

2.2.2. Data collection and analysis

In line with the interdisciplinary nature of the research and with case study methodology, data were collected and analysed using a variety of sources and methods (Table 1). This allowed for knowledge to be added regarding various aspects of the posed research questions. The variety also allowed for triangulation, i.e. for increasing the internal validity of the findings using evidence derived from different datasets and methods (Richards, 2007). While papers 1 and 2 were exclusively qualitative, papers 3 and 4 used a mix of qualitative and quantitative methods. Paper 4 used a narrower set of data sources than the other papers. Both primary and secondary data were used. Primary data were collected mainly from interviews and surveys. See Table 1, section 3 or the appended papers for more detailed information on the data used for each paper.

Participants (interviewees and survey respondents) were selected through *purposeful sampling,* i.e. they were selected based on their expected ability to provide useful information rather than to achieve a representative sample of a larger population. Purposeful sampling is generally adequate in qualitative research (Maxwell, 2008).

Interviews were carried out in a semi-structured manner, meaning that a set of questions (an interview guide) was prepared in advance but was not necessarily followed strictly. Thus, any unforeseen and interesting matters surging during the interview could be addressed. In total, 59 interviews were performed. In addition, numerous shorter or less structured communications were performed with various

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actors, mainly through telephone or email. The main function of these shorter contacts was to guide the research towards relevant data sources or topics.

The interviews were analysed differently between the papers, mostly depending on their relative importance for the respective paper. For papers 1-3, interviews were not recorded but notes were taken during the interviews. For paper 4, in which interviews were relatively more important, not only notes were taken but the interviews were also recorded and (whenever the notes were not considered detailed enough) revisited and partly transcribed. Simple coding techniques were used to analyse the interviews, through which themes were identified and put into categories. This allowed the researcher to keep track of how many interviewees had made certain statements or expressed certain considerations. Some degree of interview coding was performed for all papers, although it was done most systematically for paper 4.

Two surveys were performed to collect data for papers 3 and 4, respectively. Questionnaires (see appendices A and B) were sent by postal mail to Swedish PV adopters. The response rates were 74-80% (which is to be regarded as high) and in total 130 valid responses were obtained. The data obtained through the surveys were used mainly for descriptive statistics and to guide the further research, although some inferential statistics were also performed.

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Table 1. Data systematically collected for the four papers, by type and quantity. In addition to what is shown in this table, systematic Internet searches were important for papers 1-3, leading to the use of various secondary data.

Paper	Data		
	Type	Actor/source	Quantity
1	Interviews (duration 0.5-1 h)	PV installers	9
		Electricity companies	9
		Experts	4
2	Interviews, marketing material	Companies (Japan)	5
	Websites	Companies (U.S, Germany)	70
3	Survey questionnaire (appendix A)	Adopters	65 valid responses (80% response rate)
	Interviews (duration 0.25-0.5 h)	Local actors (e.g. PV installers, electric utilities, municipal energy advisers)	16
4	Survey questionnaire (appendix B)	PV adopters	65 valid responses (74% response rate)
	Interviews (appendix C) (duration 0.25-0.75 h)	PV adopters	16

Secondary data were collected from various sources. Documents such as industry reports, academic publications, newspaper articles and the websites of firms and other organisations were used. For papers 1-3, comprehensive Internet searches were an important tool to identify and gather data. An important data source and tool was the Swedish Energy Agency's register of applications and approvals for an investment subsidy scheme that has been available to PV adopters since 2009. The names and addresses of PV adopters obtained from this register allowed for analysis of geographical differences in PV adoption rates within Sweden, and made it possible for the researcher to contact adopters for the surveys and interviews. This register was used for papers 3 and 4.

When feasible, data were collected until theoretical saturation (Glaser and Strauss, 1967) was approached, i.e. until the marginal gain in insights obtained through additional data collection was not large enough to motivate the effort of collecting more data. There were, nevertheless, restrictions regarding the extent to which theoretical saturation could be applied (see section 1.4).

2.3. Interdisciplinarity

The research behind this thesis is *interdisciplinary* by nature. Interdisciplinarity is the combination and (partial) integration of elements from two or more academic disciplines (Boden, 1999; Klein, 2010, 1990). A broad scope alone does not necessarily imply interdisciplinarity, and neither does the mere juxtaposition of

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different disciplines (Klein, 1990). For interdisciplinarity to be meaningful, the strengths of different disciplines should contribute to address one and the same issue and, ideally, the disciplines should enrich each other (Boden, 1999). Although interdisciplinarity is often confused with *multidisciplinarity*, the latter term refers to the juxtaposition of disciplines without any requirements on integration (Klein, 1990). Distinctions between different branches of social science are to a large extent arbitrary and historically forged (Calhoun and Rhoten, 2010), meaning that that interdisciplinary approaches are often no more intrinsically wide-scoped or integrative than research within established disciplines.

Interdisciplinary approaches are often useful to study phenomena that are complex or that do not fit into one particular discipline (Calhoun and Rhoten, 2010; Klein, 1990; Krohn, 2010), including many policy challenges facing humanity, such as climate change and sustainability transitions in the energy sector (Bhaskar et al., 2010; Miller, 2010). The present research made use of two theoretical frameworks (TIS and business models) that are in themselves pronouncedly interdisciplinary (Pateli and Giaglis, 2007; Sharif, 2006). In addition, theories originating in sociology (the diffusion of innovations framework) were used to understand the role of adopters in PV deployment. Although these three frameworks were used largely in parallel rather than integrated with each other in the four papers, this chapeau ties the findings more closely together, thus strengthening the interdisciplinarity of the research.

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3. Key findings organised by papers

The four papers studied barriers and drivers to PV deployment in different geographical contexts and using different approaches. In paper 1, a sociotechnical systems approach was used to identify and assess various barriers and drivers to PV deployment in Sweden. In paper 2, business models for PV deployment that have been successful in three important PV markets (the United States, Germany and Japan) were analysed regarding their ability to overcome country-specific barriers. In paper 3, drivers that could explain the relatively high adoption rates observed in certain Swedish municipalities were identified and assessed using a multiple-case study approach. In paper 4, social influence between peers (peer effects) was studied regarding how Swedish PV adopters have increased the willingness of their peers to adopt PV. In the following, the four papers are summarised one by one.

3.1. Paper 1 – Systems perspective on barriers and drivers to PV deployment (Sweden)

3.1.1. Background

The Swedish government has an outspoken ambition to increase the share of solar energy and other renewables in the country's energy system, and subsidies for PV deployment have been available for a number of years. As previously stated, the deployment of radical energy technologies is however a complex process that may encounter several unforeseen barriers. This calls for a systematic review of the overall conditions for PV deployment within the country. Such an analysis has previously been performed by Sandén et al. (2008), who included not only deployment but also development and production in their study. This thesis provides an updated study devoted solely to the deployment phase.

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3.1.2. Objective and approach

The objective of this paper was to identify and assess barriers and drivers to the deployment of residential PV systems in Sweden. Such an analysis could result in information useful to policymakers. A technological innovation systems (TIS) approach was adopted, which is a sociotechnical systems perspective developed to analyse the dynamics of technology development, production and deployment, and to identify and assess barriers and drivers throughout a technology's value chain (see section 2.1.1). In the present thesis, however, the TIS framework was applied to the deployment phase exclusively, allowing for a more robust analysis of this phase.

Methods for data collection were comprehensive Internet searches, 22 interviews with experts, installation firms and electricity companies, as well as a number of brief communications with various actors. A large amount of secondary data, mainly identified through the Internet searches, was reviewed, including legislative texts, debate articles, organisations' websites, statistics from governmental organisations, governmental reports, etc.

The Swedish national borders were set as the geographical system boundary because they coincide with the reach of several important institutions and because a purpose of the study was to inform Swedish policymakers. Timewise, the study focused on the early 2010s.

3.1.3. Results

The analysis revealed that the Swedish TIS for PV deployment was small and underdeveloped, although the market was (in relative terms) in a state of rapid growth. Commercial actors involved in PV deployment were largely restricted to small installation companies, although electric utilities[1] and electricity retailers had also shown an increasing interest in PV systems sales and trade in solar electricity. Installation firms were typically small and with a local focus. They were often not exclusively devoted to PV technology, thus lacking the benefit of specialisation. Potentially important actors such as architects or construction companies were not

[1] In this thesis, an *electric utility* is defined as an organisation that operates an electrical distribution grid. Although the legal entity that is most directly responsible for operating the grid is not allowed by Swedish law to trade in electricity or appliances such as PV systems, a grid-operating entity and an electricity-trading entity can be (and are often) gathered within the same group of companies. The group of companies can then sell PV systems though the electricity-trading entity, while it runs the grid through its grid-operating entity. In this thesis, the term *utility* may refer to such groups of entities or to pure grid-operators. For companies engaged in electricity-trading but not in grid-operation, the term *electricity retailer* will be used.

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engaged in PV deployment more than marginally. PV systems were almost exclusively purchased by the adopters, meaning that third-party ownership business models that have been common in some more developed markets were practically non-existent in Sweden. This lack of alternative business models could be a barrier to some potential adopters who would prefer to adopt PV without purchasing a system.

Overall, the most important barrier to PV deployment was found to be the poor economic profitability of investing in a PV system. This was not only because of expensive PV systems and relatively low amounts of solar influx, but also because electricity prices in Sweden have generally been relatively low by international standards. Thus, the Swedish PV market had been created and upheld by subsidies. However, the subsidy schemes in place were sub-optimally designed, impaired by uncertainties and complexities.

The most important subsidy for PV deployment has been an investment subsidy scheme available for residential PV since 2009. Through this subsidy, adopters have been reimbursed for a fixed share of their expenses for purchasing a PV system. The scheme has repeatedly reached its budget cap, after which no more applications have been approved until more funding has been added through political decisions. As the PV market was very dependent on this subsidy scheme, the reaching of the cap has led to discontinuations not only in the scheme but in the whole PV market. This has created severe problems for installation firms that have suddenly and repeatedly lost their source of revenue. It has most often been unknown to the actors if and when new funding was to be added to the scheme. The interviews revealed that, as a result of these uncertainties, installation firms have often postponed decisions regarding the recruitment of new employees, purchasing of equipment or acquiring of a more appropriate office.

Furthermore, whenever the cap had been reached, additional applications were placed in a queue to be considered if and when new funding was added through political decisions. This led to waiting times for getting applications approved gradually increasing to more than a year, creating complications not only for adopters but also for firms. The delays have resulted in extra transaction costs for installers who have often had the feeling that they have been forced to 'sell the PV system twice', once when the adopter contacts them before filing an application for the subsidy and again after the application has been approved.

In parallel to the investment subsidy scheme, a tradable green certificates (TGC) scheme has been in place since 2003. Through the TGC scheme, owners of PV systems and a number of other renewable electricity technologies have been granted tradable certificates for their electricity production (one certificate per megawatt-hour). Certificates have been sellable on a 'free' market, demand being created by

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legal obligations on other actors to acquire certificates in proportion to their production or use of electricity.

The TGC scheme was launched as the main Swedish policy instrument to support renewable electricity, and an important feature was its alleged 'technology neutrality'. It has been an important driver of the dissemination of renewable electricity technologies, mainly for wind power (Swedenergy, 2012). The scheme has, however, been poorly adapted for micro-generation of electricity (e.g. in residential PV systems). Trading small quantities of certificates has been complicated, and although PV owners have formally been entitled certificates corresponding to their whole production, hassle and extra costs have made it unattractive to acquire certificates for the self-consumed part of the production. Perhaps most importantly, expensive metering equipment has had to be installed by the PV owner for certificates to be granted for self-consumed electricity. The misalignment of the TGC scheme to micro-generation is illustrated by the fact that only a fraction of the Swedish PV adopters had found it worthwhile to apply for TGCs at the time of the study. For example, by the end of 2012 a mere 10% of all grid-connected PV systems in Sweden were benefiting from the scheme (Stridh et al., 2013).

As regards the institutional set-up beyond subsidies, existing institutions were found to be fairly well-aligned to residential PV deployment in the sense that no particular barriers of prohibitive magnitude could be identified. An important barrier was removed in 2010 when PV adopters were given the legal right to connect their system to the grid at no cost. Building permits for PV systems have usually been granted without prohibitive costs or hassle, and even though there has been some variation between municipalities' building permit policies, national regulation has kept these costs and restrictions within certain limits.

There have, however, been some barriers related to tax rules. Most of the existing tax rules of relevance were designed decades ago for a regime of centralised large-scale electricity generation, and have not always been straightforwardly applicable to micro-generation. For example, there have been uncertainties regarding whether micro-producers selling their surplus electricity to an electricity retailer are to be regarded as 'professional' and thereby subject to extra taxation and paper work. According to the tax agency, tax rules on the EU and Swedish levels have also prohibited net metering (the practice of subtracting any electricity fed into the grid from the consumption before applying taxes), although the tax agency's interpretation of the rules on this point has been opposed by some actors.

A large problem has been uncertainties regarding the future development of the institutional set-up. Most importantly, future taxes and subsidies have been unpredictable, both regarding their design and at what times they would be in operation. Apart from the aforementioned uncertainties regarding the investment

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subsidy, there were important uncertainties regarding the planned introduction of a tax reduction scheme for PV owners[2], for example regarding the compatibility of the tax reduction with existing tax rules.

The functional analysis revealed a linear chain reaction driving deployment. 'Legitimation' had been necessary for 'resource mobilisation' of the funding used for the investment subsidy scheme. This caused 'market formation' to take off, which in turn provided 'guidance of the search' for entrepreneurs to get involved in the PV installation business. The functions not mentioned in this chain reaction ('knowledge development and diffusion' and 'entrepreneurial experimentation') were excluded because little evidence was found that these functions operated on more than a basic level. Most installation had taken place in a rather traditional manner both technically and organisationally, and the experimentation of electric utilities and other commercial actors had remained a rather marginal phenomenon. The knowledge employed by actors involved in PV deployment was rather basic (add-on PV installation is in itself not a very complicated process), and the awareness of consumers necessary for their propensity to adopt PV was rather captured by the legitimation function. Because of the deployment focus, functional feedback mechanisms from deployment to production that are often analysed in TIS studies were not made visible in this case. However, the Swedish PV market was too small to significantly affect the global PV production system and such feedback mechanisms could thus be neglected.

3.2. Paper 2 – Business models for PV deployment (Germany, United States, Japan)

3.2.1. Background

In overcoming barriers to PV deployment, firms may play an important role through organisational innovation. The development and adaptation of new and existing business models have historically often been crucial in technological transitions. As PV is a radical technology in the electricity and housing sectors, business model innovation will most likely be key to coping with various barriers. Barriers, not least related to these sectors, can vary substantially between different geographical contexts, and there is thus a need to analyse how different business models can address barriers in different PV markets. Insights into how business models can

[2] After the publication of the paper, the tax reduction has been implemented in parallel to the other schemes, meaning that there are now (December 2016) three overlapping subsidy schemes.

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counteract barriers to PV deployment could be useful to support deployment in Sweden and other emerging PV markets around the world. As revealed in paper 1, the TIS function 'entrepreneurial experimentation' was rather weak in Swedish PV deployment as practically all installation companies offered the same basic sales of turnkey PV systems. In other markets around the world, however, a variety of PV business models with rather different characteristics has emerged lately. Thus, paper 2 went beyond the Swedish setting to find empirical evidence on alternative business models.

3.2.2. Objective and approach

This study aimed at analysing how different business models for PV deployment can overcome barriers in different national contexts, and how different barriers and other contextual factors affect which kind of business models that will emerge and succeed in different settings. The study compared three distinctively different business models for PV deployment that have achieved success in three important PV markets, namely in Japan, Germany and the United States. In Germany, PV systems have been purchased and owned by the user as a financial investment. In the United States, third-party ownership (TPO) business models have proliferated. In Japan, the building industry has taken a leading role by integrating PV systems into prefabricated homes. An in-depth analysis was performed regarding the characteristics of each business model and the national contexts in which they thrive. How context has mattered for the success of the different business models, and implications for policymakers and firms, were then elaborated upon.

Based on theoretical sampling (Eisenhardt, 1989), the cases were selected for three key reasons. First, distinctively different business models have succeeded in the three countries, which allows for the identification of contextual factors that might explain why a certain business model thrives in a certain context. Second, the three countries together accounted for about 45% of the cumulative global installed PV capacity at the time of the study being performed (REN 21, 2014), making them important cases to learn from regarding successful PV deployment. Third, the extensive experience of PV deployment in the three countries was instrumental for data access.

Key data sources included firms' own material, such as websites, marketing material and annual reports. Also, legislative texts, standards, research reports, academic literature, trade journals etc. were used. In the case of Japan, the possibilities to use secondary data were more restricted due to the language barrier, and interviews were thus carried out with five companies in the prefabricated housing sector and with a number of experts, using an interpreter.

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3.2.3. Results

Below, a case-by-case account of the different business models and their respective contexts is given. The conclusions are then accounted for.

3.2.3.1. United States

In the United States, business models based on third-party ownership (TPO) have been highly successful, accounting for 70-90% of residential installations in important sub-markets such as California, Arizona and Colorado. In these business models, the adopter is not the owner of the PV system. Instead, the system is owned by a firm providing a full-service solution including planning, installation and maintenance. Financing is obtained through an arrangement in which firms package several projects into funds that are sold to investors.

TPO models are commonly based on either a power purchase agreement (PPA) or a lease. In a PPA, adopters purchase the electricity that the PV system generates. Certain criteria are set for the price so that it is highly predictable over a period of 15-20 years. At the end of this term, the adopter can purchase the PV system, have it removed by the PPA provider or renew the agreement. In a lease, the adopter instead pays a time-based fee for using the system, and gets to use the produced electricity without additional payments. PV leasing has been common in states in which PPA has not been allowed.

The TPO models used in the United States have successfully addressed several common barriers to PV adoption. First, they have minimised consumer transaction costs. The adopter's only point of contact has typically been the firm providing the TPO model, rather than numerous actors such as installation and maintenance firms, banks, insurers and government agencies. The TPO firm has also taken care of any administrative tasks related to subsidies, permits and grid-connection. Second, risks related to the ownership have been shifted from the adopter towards the firm. Third, the adopter has not had to raise capital to finance the system.

TPO models have addressed barriers that have been particularly prevalent in the Unites States. Homeowners in the United States have had lower savings rates than homeowners in Japan or Germany, and potential adopters in the United States have thus been less likely to be able to finance a PV system upfront without a mortgage. Furthermore, access to home equity loans has been severely restricted in the wake of the financial crisis of 2008, which has left many homeowners 'underwater' (their home mortgage being larger than the value of their home), further restricting potential adopters' ability to finance a PV system purchase. People in the United States also tend to move relatively frequently, which for many potential adopters has likely increased the relative attractiveness of immediate electricity bill savings compared to a long-term investment in their home. Lastly, transaction costs in PV

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deployment have been higher in the United States than in Japan or Germany, which has made it more attractive for adopters to impose them on a third party.

3.2.3.2. Germany

In Germany, PV systems have mainly been financed and owned by the adopters themselves. In the business model dominating German PV deployment, the value proposition has been based on PV adoption as a low-risk financial investment fully competitive with other investment alternatives. Adopters have been guaranteed stable revenues for 20-21 years through a feed-in tariff scheme backed up by national legislation. Policymakers have regularly monitored the cost development of PV systems and adapted the feed-in tariffs to keep the IRR of PV adoption at around 7%.

Transaction costs in PV deployment have been relatively low in Germany. Institutional alignment and local learning among practitioners since the early 1990s have led to a relatively smooth deployment process, and legal-administrative processes related to PV deployment have become among the least complicated in Europe. The absence of high transaction costs has made the third-party owner somewhat redundant as a key function of a third-party owner is otherwise to absorb transaction costs. This is likely a partial explanation for German PV adopters' preference for purchasing and owning PV systems without the involvement of a third-party owner.

As German adopters have fully financed the upfront cost, the German business model has benefited from the availability of low-interest loans especially dedicated to PV. These loans have been provided through a government-owned bank since 1999. The loans have often been supplemented by equity from the customers, and the relatively high savings rates of German homeowners have thus facilitated the business model.

Just like firms in the United States, German firms have been offering a variety of services and features to reduce uncertainties and complexity. These include comprehensive insurance packages, long-term warranties for durability and performance, as well as certification of PV system components and installers through reputable organisations.

3.2.3.3. Japan

In Japan, the cross-selling of PV systems together with other products has been widespread, particularly in the construction sector. The *prefabricated homes industry* has been leading in this regard and, as early as 2011, about 60% of all new prefabricated homes came with a PV system. The prefabricated homes sector has held around 20% of the market for new homes and 10-15% of the residential PV

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market. The prefabrication of homes has been dominated by around ten large companies.

The value proposition has had several advantages compared to value propositions based on add-on PV systems. PV systems sold with new homes have been less expensive for the adopter than add-on systems, and roof integration has allowed for aesthetically appealing solutions. As the adopter has already established a contact with the supplier for the purpose of purchasing a home, transaction costs have been reduced for both parties. In Japan, PV adopters who have purchased their PV system together with a new home have typically been more satisfied with the adoption than have other PV adopters (Mukai et al., 2011).

The expenses for the PV system have generally been integrated into the home mortgage, reducing transaction costs and interest rates. As a mortgage needs to be issued for the home in any case, it has been easy to expand this loan to include the PV system. From the perspective of the financial institution issuing the loan, the income generated through the PV system has enhanced the adopter's creditworthiness. Building-integration has also been a benefit in this regard as a system physically integrated into the roof cannot as easily come adrift.

A key contextual factor explaining the success of this business model is the pre-existence of a highly industrialised prefabrication sector. Built upon large volumes, automation and advanced logistics systems, Japan's prefabrication industry has seemingly been the most industrialised house-building industry in the world. Industrialisation has brought about a high degree of standardisation, benefitting PV integration. The high level of industrialisation has, in turn, sprung out of a 'scrap and rebuild' culture in which almost 90% of all homes sold have been newly produced. Homes in Japan have typically depreciated very rapidly as they have increased in age.

Unlike in Western countries, prefabricated homes in Japan have been considered to be of higher quality than site-built homes, and they have typically been more expensive and equipped with more features. The cost savings achieved through industrialisation and mass-production have generally been used to add more features to the homes rather than to reduce consumer prices. Through this so called *mass customisation*, consumers have been offered a wide variety of choices between mass-produced components, including energy devices such as batteries, fuel cells, heat pumps and home energy management systems. PV systems have neatly fitted into this pattern.

Another relevant contextual factor has been the domestic PV industry, which has been dominated by large electronics companies keeping large parts of the PV value chain within their own organisation. The Japanese PV industry has played a key role in making prefabricated PV homes become common in Japan by marketing their

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products intensely towards the prefabrication industry rather than directly to consumers. They have also been seeking collaboration with prefabrication companies, something that, as revealed by the interviews, the prefabrication companies have often perceived as valuable and helpful. The interviews also revealed that house producers have tended to prioritise stable long-term partnerships with PV module suppliers over lower prices or higher efficiency of the modules. Although Japanese modules have been substantially more expensive than for example Chinese modules, all house producers interviewed used Japanese modules. They motivated this choice by explaining that communication with and reliability of the module producer and its products are crucial when modules are to be customised to fit the roofs.

Also, assurances of the national government that subsidies were to be present for an extended period have been important for the prefabrication industry to work with PV integration. Changing production lines is expensive, and the house-building industry has preferred certainty that PV systems were to remain attractive for their customers before making such investments.

3.2.3.4. Conclusions

In all three cases, the studied business models for PV deployment have enabled firms to overcome typical barriers faced by prospective PV adopters, such as complexity, transaction costs, risks and access to finance. Yet, the business models have been distinctively different. The analysis suggests that the differences between them have to a large extent been the result of differences in the national contexts in which they have occurred. The importance of context implies that business models for PV deployment cannot necessarily be viably transferred from one setting to another. (For example, recent attempts to implement TPO business models in Germany have not been very successful.)

The strong presence of TPO models in the United States and their absence in Germany and Japan is not likely to only be the result of differences in consumer preferences, but also of other contextual factors. TPO models have effectively addressed issues that have been particularly prevalent in the Unites States, such as low savings rates, restricted access to capital, high mobility on the housing market and high transaction costs. In Germany and Japan, on the other hand, higher savings rates, better access to low-interest loans, lower mobility on the housing market and lower transaction costs have made PV adopters more prone to purchase and finance the PV systems themselves.

TPO models for PV deployment may gradually lose their relevance for most adopters as PV markets mature. Market maturation usually entails a reduction in transaction costs and risks, which might make it more attractive for adopters to finance and own PV systems themselves. As TPO models require more middle-men

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capturing their share of the lifecycle economic gains of a PV system, business models based on self-ownership have the potential to become more financially beneficial for adopters. Once other barriers disappear, self-ownership could thus become the most viable option for most adopters also in markets such as the United States. A high proliferation of TPO models could perhaps even serve as an indicator for policymakers that there are barriers that should be dealt with. TPO models could, however, still prevail in mature markets to serve certain market segments, as some adopters might value the simplicity of TPO models more than the prospects of higher long-term financial gains.

3.3. Paper 3 – Local factors and information channels influencing PV deployment (Sweden)

3.3.1. Background

On the surface, the conditions for PV deployment seem to be rather homogenous throughout Sweden, as economic and institutional conditions do not differ much between different parts of the country. Yet, PV adoption rates vary between municipalities to an extent that is beyond what could be explained by local factors such as building stock characteristics, solar influx or average income. This raises the question of whether there are unknown local drivers present in these high-dissemination municipalities that have increased local adoption rates.

3.3.2. Objective and approach

This paper aimed at identifying and assessing factors that could explain high localised adoption rates of residential PV systems in Swedish municipalities. An explorative multiple-case study approach was used (Yin, 2009). Five municipalities that stood out in terms of high PV adoption rates were studied in depth. These main cases were then compared to 50 municipalities with low PV adoption rates, which were studied in less depth. Triangulation of quantitative and qualitative methods and different data sources was used to enhance the robustness of the findings.

The main cases were selected as follows. All Swedish municipalities were ranked by their per capita PV density and by their PV density in terms of number of PV systems per detached home. Those five municipalities that occurred in the top ten in *both* these rankings were selected. As comparison cases, the 50 municipalities with the lowest per capita PV adoption rates were selected (except for one

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municipality that was excluded because it had very few detached homes). The case selection was thus a combination of replication (cases with the same outcome on a key variable) and a 'two tail' design (cases on either extreme of a key variable) (Yin, 2009).

Data were collected by three main methods. First, a survey questionnaire (see appendix A) was sent by postal mail to all presumed PV adopters that could be identified in the five main case municipalities. The survey yielded 65 valid responses at a response rate of 80%. The aim of the survey was to assess various local information channels that might have affected the respondents' decision to adopt PV. Second, 16 interviews, as well as a number of shorter communications, were performed with local installers, electric utilities and other key actors. Third, comprehensive Internet searches were performed to identify actors and gather other relevant information about the cases.

The data necessary to estimate municipalities' adoption rates and to contact adopters were obtained from the Swedish Energy Agency. More specifically, a register of applications and approvals for the national investment subsidy scheme (this scheme has been described in section 3.1.3) was used, containing the names and addresses of adopters. Since few PV systems had been installed outside this scheme, these data were assumed to provide a good representation of the actual number of installations.

3.3.3. Results

The results pointed to local actors promoting PV as an important explanatory factor behind the relatively high adoption rates in the five main case municipalities. This finding was corroborated through triangulation, as the three main sources of data (survey, interviews and Internet searches) pointed largely to the same explanatory factors. Common to the five municipalities was the presence of local organisations promoting solar energy from an early stage, mainly electric utilities and installation firms selling PV systems and disseminating information. The survey respondents recognised that they had been influenced to a substantial extent by these activities. Overall, the respondents rated local information channels as slightly more influential than common non-local information channels such as nation-wide media, websites with a non-local focus and non-local acquaintances. The survey results indicated that the local factors had not only *raised the respondents' interest* in PV but also *influenced their final decision* to adopt, suggesting that these factors operated throughout a substantial portion of the innovation-decision process (cf. Rogers, 1983).

The relative importance of different factors varied between the studied municipalities. Regarding this variation, the survey results were largely in line with the results obtained through the interviews and Internet searches (factors that were

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found to be of high relative importance in a municipality using one method were also found to be of high relative importance using the other methods). For instance, in the two municipalities with the most active local utilities, the respondents regarded utilities as more important than respondents in the other three main case municipalities did. In one municipality where installations had been largely concentrated to one zip code area in which an installation company was based, peer effects and PV installers were recognised by the respondents as relatively important. In another municipality, where a local association has realised a number of larger ground-mounted PV installations, the presence of ground-mounted PV was recognised by the respondents as important in inspiring them to adopt PV.

Local electric utilities supporting PV appeared to have been a particularly important driver elevating local PV adoption rates. Local utilities promoting PV during the period studied were found in four of the five main case municipalities, while none of the local utilities in the 50 comparison municipalities were found to have engaged in PV promotion during or before the period studied. The local utilities supporting PV in the main case municipalities had started their promotion of PV *before* the PV market started taking off, indicating causation in the direction from utilities towards increased adoption rates. The importance of utilities was also recognised by the survey respondents. Seminars attended by the respondents had (as reported by the respondents) been arranged mainly by local utilities, and 54% and 24% of the respondents agreed that their final decision to adopt PV had to some or to a large extent, respectively, been due to their utility purchasing PV electricity.

The results also indicated some causality going in the other direction. During the interviews, some representatives of PV-promoting utilities acknowledged that their organisations had been influenced to some extent by customers adopting PV or contacting them for information on grid-connection of PV, thus pushing them towards developing strategies for PV. This reveals the presence of a positive feedback loop: customers influence their utilities, which in turn influence other customers to adopt. The interviews also revealed that the utilities' engagement in PV promotion had in most cases started largely as the result of one devoted staff member (usually the CEO). These persons had, for one reason or the other, adopted a positive attitude towards PV, and had had the personal drive to win their organisation over to promoting PV.

Lastly, respondents in all municipalities recognised having been influenced by PV adopters in their proximity (peer effects), both through direct communication with adopters and by observing PV systems in their neighbourhood. These findings were strengthened by the interviews with installation companies, which largely agreed that after installing a PV system at a particular place, they would often shortly thereafter get additional requests from homeowners in the same area. These homeowners had, according to the interviewees, often been inspired by the first

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installation. On average, the survey respondents considered local acquaintances to have been about as influential on their adoption decision as installation firms. However, local peers whom the respondents categorised as 'neighbours' were seen as having had a rather minor influence, indicating that the peer effects had been mediated through other kinds of social relations than those between people regarding each other primarily as neighbours.

3.4. Paper 4 – Peer effects in PV adoption (Sweden)

3.4.1. Background

The results of paper 3 suggested that peer effects (social influence between peers) have been a factor in reducing barriers to PV adoption in Sweden. A number of previous studies have also quantified peer effects in PV adoption in other settings, mainly Germany and the United States (Bollinger and Gillingham, 2012; Graziano and Atkinson, 2014; Graziano and Gillingham, 2014; Müller and Rode, 2013; Rai and Robinson, 2013; L.-L. Richter, 2013; Rode and Weber, 2013). This research has mainly been concerned with estimating the increased probability of PV adoptions occurring within a small geographical area as the result of previous adoptions in the vicinity. Little, however, has been known about the inner workings of peer effects in PV adoption. Thus, in paper 4, a closer look was taken at the role of peer effects among Swedish PV adopters.

3.4.2. Objective and approach

The study took a mixed-methods approach (combining quantitative and qualitative methods) to add knowledge of the inner workings of peer effects among Swedish PV adopters. More specifically, the research aimed at shedding light on what kinds of social relations mediate peer effects, what kind of information is transferred between the peers and what emotions are evoked leading to the adoption of a PV system.

Data were collected through a survey questionnaire (see appendix B) and interviews (see appendix C) with selected survey respondents. The survey was sent by postal mail to Swedish PV adopters. To maximise the occurrence of peer effects among the respondents, adopters living in zip code areas with high adoption rates were targeted. Just like for paper 3, data for estimating local adoption rates and addresses of adopters were obtained from the Swedish Energy Agency's register of applications and approvals for the national investment subsidy scheme. All Swedish

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zip code areas were ranked by their number of PV systems per capita, and the survey was sent to all 92 individuals that had had their applications for the subsidy approved in the 25 zip code areas with the highest adoption rates (except for five areas that were located in the municipalities studied in paper 3, which were excluded because the adopters on those areas had recently been sent a similar questionnaire). The survey yielded 65 valid responses at a response rate of 74% (four presumed adopters returned the questionnaire informing that they had in fact not adopted). The survey was mainly built upon five-point rating scales of both unipolar and Likert type, in which the respondents were asked to rate how they perceived that seeing PV systems or talking to PV adopters in or outside their neighbourhood had influenced their perceptions of PV technology.

Telephone interviews were performed with selected survey respondents. Those 22 respondents who reported having been in contact with at least one PV adopter in their neighbourhood prior to taking a final decision to adopt (and who had provided their telephone number) were selected, and full interviews were carried out with 16 of them. The interviews were recorded, and whenever the notes taken during the interviews were not considered detailed enough, the recordings were used to complement the notes. Key data were coded in a spreadsheet.

Considering that people tend to consistently underestimate the impact of social influence on their decision making (Nolan et al., 2008), the risk of overestimating peer effects using the chosen methodology, which relied on participants' self-estimation, was assumed to be small.

3.4.3. Results

As in paper 3, the presence of peer effects was widely recognised by the participating PV adopters. Among the survey respondents, 38% reported that contact with a peer (local or non-local) had been highly important ("4" or "5" in the rating scales) for raising their interest in PV. The corresponding figure for the final decision to adopt was 35%. Among respondents who had been in contact with an adopter in their neighbourhood before they decided to adopt (28 respondents), half agreed that the contact had been highly important for raising their interest in PV, and almost half did so regarding their final decision to adopt.

The interviews revealed that the contacts had almost exclusively occurred through pre-existing and rather close social networks, such as friends and family. Contacts with PV-using neighbours to whom the respondent had no deeper relationship had been rare and of minor importance (this was also suggested by the survey carried out for paper 3). This contrasts somewhat to what has been previously believed about peer effects in PV adoption, where the role of neighbour relations has (more or less implicitly) been assumed to be important. Furthermore, even though the

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sample was selected based on a presumed high occurrence of *local* peer effects, almost as many respondents reported having been highly influenced ("4" or "5" in the rating scales) by someone living *outside* as *inside* their neighbourhood.

The main function of the peer effects appears to have been a confirmation that PV works as intended and without hassle, rather than the procreation of unexpected insights or the provision of more advanced information. The confirmation was strengthened by the trustworthiness of the peers, who (apart from being known by the participants) as private homeowners were in a situation similar to that of the participants, and who (as opposed to PV installers) lacked economic incentives to recommend PV adoption. The information transferred had generally not been of a very advanced character, and had mainly related to ease of use and economic performance – that PV systems worked as intended and without hassle, and that they delivered as much electricity as expected. This information had, nevertheless, been perceived as useful by the interviewees; it had contributed to reducing a general uncertainty about PV as a new and 'unknown' technology, and had increased the participants' determination to adopt. Overall, few of the contact persons had recommended PV adoption outright – rather, they had provided more 'neutral' accounts of their experiences as adopters. Almost all interviewees had seriously contemplated PV adoption and acquired some knowledge of PV before any contact with previous adopters took place, and the contacts did thus not evoke much unexpected insight.

When it comes to the role of *passive* peer effects (influence of *seeing* PV), the results indicated that these had been of minor importance. As in the survey carried out for paper 3, seeing PV systems was regarded as a relatively important influential factor. However, a closer look at the data revealed that respondents who had seen a PV system in their neighbourhood tended to regard this as influential only if they had also been in contact with an adopter. The interviews confirmed that it was when a PV system had been seen in connection with adopter contact that it had been influential, for example when visiting a PV owner that demonstrated his or her PV system.

Contacts between the interviewees and previous adopters had come about in two principal ways: either the interviewee had approached the PV adopter with the purpose of acquiring information from him or her, or the topic had come up as they had met for another purpose. Only in one case had the interviewee experienced being approached by an adopter (other than a salesperson) who appeared to have had the purpose of talking about PV. In the previous literature, it has sometimes been assumed that seeing local PV systems tend to induce people to contact the systems' owners to get more information. However, the findings of the present study did not support that such an order of events had been common in the studied setting,

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as almost no contacts had come about as the result (partly or fully) of the interviewee first seeing the contact person's PV system.

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4. Concluding discussion

In this section, a synthesis of the findings of the four papers will first be presented. The methodological contributions of the thesis will then be discussed. Based on the findings, some recommendations for policy will also be provided, both specific advice for reforms of Swedish policy and more general advice. Lastly, some pathways for further research will be suggested.

4.1. Synthesis of findings

The objective of this thesis was to identify and assess barriers and drivers to residential PV deployment in different geographical settings, taking the spatial dimension into account. The findings of each paper have been accounted for separately in section 3. The added value of this synthesis is that it builds a larger and more coherent picture of barriers and drivers on different spatial levels, thus contributing to an improved understanding of the geography of sustainability transitions (cf. Coenen et al., 2012; Hansen and Coenen, 2015).

While the price and performance of PV technology have been largely determined on the international level, the thesis goes into depth with barriers and drivers rooted in national and local settings. By studying altogether four national PV markets, papers 1 and 2 identify and assess barriers and drivers mainly rooted on the national level, providing various examples of how institutions, industry, culture and financial aspects have affected PV deployment. On the local level, papers 3 and 4 show how local organisations and private individuals have driven PV deployment through information provision and social influence. Together, barriers and drivers rooted on all these levels determine the conditions for PV deployment at any given location. Thus, an understanding of barriers and drivers on all levels is important.

Paper 1 took a systemic perspective to identify and assess barriers and drivers in Sweden. The analysis was facilitated by the technological innovation systems (TIS) framework, which guided the research to relevant actors, networks, institutions and processes. The analysis depicts a small, underdeveloped Swedish TIS for PV deployment, albeit in rapid growth in relative terms. Limited economic profitability in PV adoption was a crucial barrier during the period studied (also including

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subsidies). The results reveal that the Swedish policy environment has been uncertain and complex, creating problems for different actors. The institutional barriers in Swedish PV deployment (which have been described in more detail in section 3.1.3) could be coarsely summarised as follows: First, the fact that more than one subsidy scheme for PV deployment have been running in parallel is a complexity in itself. Second, there have been uncertainties regarding when different subsidies were to be available, and on what conditions. Third, important rules, mainly related to taxes, have been unpredictable.

Even though the institutions affecting PV deployment in Sweden have mainly been national, they have not always been fully controlled by the national government. For example, Swedish rules for taxes and building permits affecting PV deployment have partly been determined on the EU and the municipal levels, respectively. Paper 1 reveals that institutions on the EU level have restricted the ability of the Swedish government to adapt rules to PV and other micro-generation technologies, resulting in institutional rigidity that has contributed to a lock-in of the incumbent energy system (cf. Unruh, 2000).

The thesis also demonstrates that country-specific characteristics of a domestic industrial sector can be important for PV deployment. Paper 2 reveals that certain characteristics of the Japanese construction sector, such as a high degree of industrialisation and standardisation, have been important for the physical and organisational integration of PV into the construction of new buildings in Japan. Those factors are rather unique to the Japanese construction sector compared to other domestic construction sectors around the world. This is likely an important explanation of why the Japanese construction sector has been highly involved in PV deployment as compared to construction sectors in other important PV markets.

The thesis also identifies barriers and drivers that vary between countries but are less confined to administrative borders. Such factors include cultural and behavioural aspects such as savings rates, homeowner mobility (how often people move), accustomedness to TPO business models (not only for PV) and priorities regarding long-term versus immediate cost savings. As suggested by paper 2, these aspects will influence what kind of business models will be most viable within a certain context, as different business models are suited to overcome different barriers to deployment. Perhaps most importantly, this relates to the ability of potential adopters to raise capital and to their preferences regarding whether to own the PV system or consult a TPO firm. Another example is real estate prices, which have developed rather differently between countries and regions, influencing homeowners' ability to finance a PV system. If the value of a home substantially exceeds the mortgage for the same home, the homeowner can often quite easily get a home equity loan to finance a PV system. This will be the situation for most homeowners in regions where the prices of homes have increased substantially in

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recent years. On the other hand, there are many regions around the world in which the values of homes have decreased dramatically in the wake of the financial crisis of 2008. In these regions, homeowners will typically have less opportunity of getting a home equity loan, and many of them will be 'underwater', meaning that the value of their home is lower than their mortgage. These homeowners will often find it difficult to finance a PV system, and TPO business models might then be a viable option. As argued in paper 2, this is likely a contributing factor to the success of TPO business models in California, where housing prices declined substantially after the financial crisis.

Paper 2 illustrates that certain business models can successfully overcome complexities and uncertainties faced by prospective PV adopters on the national level. It is thus noteworthy that Sweden, with its complex and uncertain policy environment, has (as was found in paper 1) lacked alternative business models such as TPO even though these have been successful in addressing complexities and uncertainties in other countries. As argued in paper 2, a lack of alternative business models (such as TPO) could be a barrier for some categories of potential adopters, and trying to explain the absence of TPO models in Sweden is thus justified. Drawing on papers 1 and 2, this synthesis allows for some remarks in this regard. A first reason for the absence of TPO models in Sweden could be the low economic profitability of PV investments; TPO models require a middle-man taking a share of the life cycle economic gains of a PV system, and the total economic gains might simply have been too small in Sweden for TPO to be viable. Second, the small size of the Swedish PV market might have decreased the likelihood of TPO models occurring as they require a higher level of organisational sophistication. Third, the Swedish institutional uncertainties have created risks of events that would affect all installations simultaneously. This contrasts to risks of events that occur independently of one another for each installation. While TPO models do not address the former kind of risk (events affecting all installations simultaneously could ruin a TPO firm), they successfully address the latter kind by spreading the risks over a large number of installations. Fourth, the Swedish housing market has withstood the global financial crisis remarkably well from an international perspective, and the prices of homes have increased rather consistently during the last decade, which has made it easier for Swedish homeowners in general to finance PV systems themselves without the need for a TPO model.

When it comes to the local level, papers 3 and 4 point to local sources of information as being an important driver of PV deployment. Local information seminars organised by electric utilities seem to have had a substantial effect in increasing adoption rates in Swedish municipalities (paper 3), and basic information transferred between peers appears to have been important in convincing Swedish homeowners to adopt PV (paper 4). Even though information channels operating on a higher geographical level, such as websites directed towards a national or

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international audience and media with a national coverage, were important for the decision making of the participating adopters, the findings of paper 3 suggest that local sources of information were of equal or higher importance. A substantial function of the information appears to have related to raising the interest in PV among potential adopters, indicating a lack of basic awareness.

Even though the geographical entity studied in paper 3 was the municipality, the findings point to another geographical entity of relevance, namely the area covered by the electrical grid operated by a certain utility. Different utilities have developed different strategies and attitudes regarding PV, and the results of paper 3 strongly suggest that a local utility's supportive attitude can substantially increase local PV adoption rates. Even though these effects are surely not strictly confined to the area covered by the utility's grid, the reach of the grid is likely to be of significant importance as everyone connected to the grid is a customer of the utility and thus subject to its communication. While utilities might have different roles in different countries, previous research on local sources of market formation (Dewald and Truffer, 2012) has not acknowledged the role of utilities, which might be relevant in some (though likely not all) other countries as well.

A driver with an inherently large local component is *peer effects* (social influence between peers resulting in PV adoptions). Previous research has identified substantial localised peer effects in PV deployment using quantitative research methods (Bollinger and Gillingham, 2012; Graziano and Atkinson, 2014; Graziano and Gillingham, 2014; Müller and Rode, 2013; Rai and Robinson, 2013; L.-L. Richter, 2013; Rode and Weber, 2013). Little has been known, however, about the inner workings of peer effects in PV deployment. Together, papers 3 and 4 contribute to deepening the understanding of peer effects by surveying in total 130 PV adopters and interviewing 16 of them, thus introducing a qualitative perspective that has been lacking in the previous research. Paper 3 confirms that peer effects in PV adoption also exist in the Swedish setting, and the paper provides some tentative findings regarding their underlying mechanisms. In paper 4, the mechanisms behind the peer effects were investigated more deeply. The two papers used data from different sets of participants (one set for each paper) and, as some survey items were identical or very similar for the sets, they together provide a larger sample on some aspects.

Paper 4 suggests that the main function of the peer effects was a *confirmation* from a trustworthy source that PV adoption would be a sound choice. The information transferred was generally not of a very advanced character, and related mainly to ease of use and economic performance – that the technology worked as intended and without hassle, and that it delivered as much electricity as expected. This information was perceived as useful by the interviewees, and it contributed to reducing a general uncertainty regarding PV as a new and 'unknown' technology,

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thus reducing barriers to adoption. Paper 4 was unique not only to the Swedish context, but also globally, as peer effects in PV adoption had not previously been studied through interviews with adopters.

The results of papers 3 and 4 suggest that the main reason (at least in the studied setting) for peer effects having a large local component is that people who are family and friends tend to live close to one another, rather than people influencing one another through more superficial neighbour relations. Both papers reveal that relations with people who the adopters perceived as 'neighbours' were perceived to have been of minor importance – instead, the influence had taken place through closer and more established social networks. The high degree of localisation in peer effects has led to an assumption in the previous literature that neighbour relations and passive influence (through passively observing neighbours' PV systems) have been important mediators of peer effects. However, paper 4 suggests that passive peer effects played but a minor role in the studied context. One implication of these results relates to the fruitfulness of different computational models of peer effects in PV deployment. Two different approaches to such models are based on social networks and geography, respectively (Bale et al., 2013; Rode and Weber, 2013). The results of this thesis indicate that the former approach might more accurately reflect the underlying processes at work.

Lastly, the thesis demonstrates how the local nature of PV deployment can create inefficiencies, at least in a small and early market such as the Swedish one. Paper 1 reveals that the installation of PV systems in Sweden has been dominated by small, local firms that have often not been exclusively devoted to PV technology, thus lacking the benefit of specialisation. This can be seen as a consequence of the fact that PV systems need to be installed on-site by the firm's staff, in combination with a small market size. Several of the installers interviewed for paper 1 expressed the ambition to become more specialised, claiming that the small market size within their catchment area would not support specialisation. With limited demand for PV systems within a reasonable travelling distance, a full-time job cannot be sustained by the demand for PV installations only. This leads to poor economies of scale on the local level, and to a lack of competition as the number of installers offering their services in any given place will be limited.

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4.2. Methodological contribution

The thesis makes some contributions regarding research methodology, which will be discussed below. A first contribution relates to the application of the TIS framework. In paper 1, this framework was used to study PV deployment separately from processes occurring earlier in the PV value chain. Paper 1 demonstrates that it is meaningful to apply the TIS framework to study deployment separately in order to identify and assess barriers and drivers, and that deployment taken on its own is a complex and systemic process that motivates the use of a holistic analysis tool such as the TIS framework. The thesis argues that in cases where a mature technology is to be deployed in a catching-up market that is small in relation to the international production system for the technology in question, a pure deployment focus is motivated in TIS analyses. The value of this contribution is made evident by the fact that a pure deployment focus allows the researcher to focus his or her resources on the deployment phase, thus avoiding spending valuable time studying technology development and production, and saving him or her the effort of doing an international and spatially differentiated TIS analysis. Furthermore, increasing global specialisation and division of labour, as well as an increasing availability of mature renewable energy technologies that can be deployed in new regions, can be expected to create an increasing need for deployment-focused TIS studies (see section 2.1.1.3).

The thesis also demonstrates how the TIS framework, the business models framework and Rogers' diffusion of innovations framework can be combined to study technology deployment (see section 2.1). The latter two frameworks fit within the scope of the TIS framework and are appropriate choices when zooming in on selected parts of a TIS that relate to technology deployment. The thesis argues that the latter frameworks connect well to certain phenomena described in the TIS literature, such as certain categories of actors and the functions 'entrepreneurial experimentation', 'knowledge development and diffusion', 'legitimation' and 'market formation'. Thus, the latter frameworks could well be positioned within the TIS framework – the very concept of a 'business model', as well as various core concepts within both the frameworks, could be incorporated into the TIS framework, in some cases perhaps by replacing existing terminology. This would, nevertheless, require a deeper analysis, which is beyond the scope of the present thesis.

Another methodological contribution relates more directly to the application of the business models framework. In paper 2, the viability of different business models for PV deployment in different countries was studied. Previous literature on business models had elaborated upon how business model innovation can bring new (sustainable) technologies to the market (Bocken et al., 2014; Boons and Lüdeke-

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Freund, 2013; Mont et al., 2006; Reim et al., 2015; Tukker, 2004) and upon the role of the wider sociotechnical context for shaping business models (Birkin et al., 2009; Budde Christensen et al., 2012; Casper and Kettler, 2001; Linder and Cantrell, 2000; Provance et al., 2011). The methodological uniqueness of paper 2 was that it combined the business models framework with a comparative case study approach to pinpoint contextual factors in different geographical settings. This had not previously been done for PV technology and, to the best knowledge of the authors, it had not been done for the deployment of any other technology either. The approach proved useful in understanding how different business models can overcome contextual barriers (see section 3.2.3) to technology deployment and thereby create value for adopters and firms.

Also some contributions regarding methodology to study local variations in PV adoption rates were made. For paper 3, an approach based on comparative case studies was developed to identify and assess local drivers in Swedish municipalities. A combination of a replication and a 'two tail' design (Yin, 2009) was used. Five 'main cases' (municipalities with the highest adoption rates) and 50 'comparison cases' (municipalities with the lowest adoption rates) were studied. The number of comparison cases was larger because data were scarcer for this category. The comparative element of the approach was two-fold. First, the main cases were compared to one another. Second, the two categories of cases were compared to each other. The method proved useful to pinpoint local drivers that could explain why certain municipalities have stood out in terms of high PV adoption rates. To the best knowledge of the author, there has not previously been any research on local variations in technology adoption rates using an approach including the elements described above.

Furthermore, paper 3 introduced a novel approach for dealing with differences in building stock when selecting cases for comparative case studies of geographical differences in PV adoption rates. There is often a need to take building stock into consideration when studying causal factors behind PV adoption rates, as the characteristics of the built environment (e.g. the share of detached homes) may otherwise become an important confounding variable. For paper 3, all Swedish municipalities were ranked by their PV-density using two measures: the number of PV systems *per capita* and *per detached home*. Municipalities that occurred at the top or bottom of *both* these rankings were selected. The inclusion of the latter criteria served as a control mechanism, reducing the risk of local building stock characteristics confounding the selection process (see section 3.3.2).

Lastly, for paper 4, a mixed-methods approach was developed to study peer effects in PV adoption, combining qualitative and quantitative research methods through a survey and follow-up interviews with selected respondents. Thus, a qualitative perspective that had hitherto been lacking in studies of peer effects in PV adoption

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was introduced. As peer effects are by nature closely related to the adopters' own thoughts and emotions, survey data arguably need to be complemented with interviews – particularly in a stage where the understanding of the effects is limited – to make sure that the survey data have been interpreted correctly and to increase the chances of identifying any important matters not identified through the survey. The method proved useful to nuance the previous understanding of peer effects in PV adoption, and continued research using this or similar approaches may be fruitful in achieving a deeper understanding of peer effects in the adoption of PV or other technologies.

4.3. Implications for policymakers, firms and others

Based on the findings of this thesis, some recommendations can be derived for policymakers, firms and other actors aiming to support PV dissemination. Below, a set of general advice will first be provided. Then, a number of more specific recommendations for reforms of existing Swedish policy will follow.

A first set of advice relates to *business models* for PV deployment (paper 2). The findings regarding the relationship between business models and their surrounding context may be useful to both policymakers and firms. Even though the research on business models was not carried out in Sweden (as was the rest of the research), the findings might prove useful to overcome barriers in Sweden and other catching-up markets.

One piece of advice for policymakers is to remove any institutional barriers that might obstruct the use of certain business models, or to provide enabling legislation for business models that have proven viable in other contexts. Preferences vary between consumer groups, and a variety of business models for prospective adopters to choose from could thus increase the overall adoption rates by satisfying the preferences of a larger number of consumers. Furthermore, a substantial number of the potential adopters will, in many contexts, find it difficult to finance and own a PV system even if a purchase would be their first choice. Any institutions hindering TPO business models may thus impose a barrier to PV deployment. This does not necessarily mean that policy has failed if all business models that have proven successful in other markets are not present in the market of interest, as it might simply be the case that the market has selected against certain business models due to differences in consumer preferences or other contextual differences that are beyond the direct control of policymakers.

When it comes to firms, the findings on business models could be informative when planning to enter new markets or targeting certain consumer segments. The findings could also guide firms in how to respond to a changing context.

A second set of advice relates to *electric utilities* (organisations operating electrical grids). Paper 3 strongly suggests that local utilities can elevate PV uptake in their area by supporting PV. Policymakers could exploit this by influencing utilities to take a supportive attitude towards residential PV. Such influence could be exercised by informing utilities about PV technology and about how other organisations have worked with PV, for instance by offering utilities' staff training as to how to best support PV deployment. A web-based platform for the provision and exchange of information directed towards utilities could be implemented (perhaps as part of a larger platform for PV information directed to a broader audience). Educating utilities might both increase the chance of them choosing to support PV deployment, and make utilities perform better in providing their customers with relevant information. In cases where a government owns a utility (Swedish utilities are, for example, often owned by local governments), the government could steer the utility towards promoting PV. Utilities could also be regulated to take a more active role in PV deployment.

Another piece of advice is to arrange *information seminars* targeting private homeowners. Such seminars could be arranged by any actor (such as utilities, non-profit organisations, local governments and installation firms) interested in supporting PV deployment. Paper 3 suggests that local information seminars have been an effective strategy to convince homeowners to adopt PV in Sweden. The effectiveness of seminars might, nevertheless, depend on context-specific factors. Two key characteristics of the Swedish PV market are that it is in an early stage of development and that there is limited economic profitability in residential PV adoption. As convincingly argued by Noll et al. (2014), there are reasons to believe that information provision has the highest prospects of being effective in markets where PV is neither very profitable nor clearly unprofitable. Awareness of PV might also be lower in early markets, in which case there is a higher need for information dissemination. The generalisability this advice might thus be more or less limited to markets that are similar to Sweden in these respects.

A last piece of advice relates to *peer effects* (papers 3 and 4). Actors with a goal to increase PV uptake could seek to make use of peer effects by involving existing PV adopters in information campaigns or marketing. This might prove a cost-effective strategy for policy and businesses even if the existing adopters are economically compensated for their involvement.

Paper 4 reveals that information obtained from peers plays a partly different and complementary role compared to other information sources, such as the advice of professionals. Peers (at least in the context studied) seem to convince each other to

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adopt PV by giving reassurance that adoption is indeed a sound choice, rather than through the provision of more factual information (which can be found in written sources or obtained through professional advisers). Trust is not only gained through established social relations, but also through peers being in a similar situation (as private homeowners), having actual experience as adopters, and (as opposed to firms) lacking economic incentives to portray PV in an excessively positive manner. The participation of PV adopters in information campaigns or marketing could thus be effective as a complement to other means of information provision.

There are various conceivable strategies for making use of peer effects. One suggestion is to include sessions in information seminars where visitors get the opportunity to talk to adopters, for example in Q&A sessions or group discussions. Study visits could also be organised by firms or policymakers to the premises of adopters to let attendants see their PV system and talk to them. Another option would be to have local energy advisors provide citizens with contact information to local adopters. Policymakers might even want to target certain individuals to become PV adopters if these individuals could be expected to be particularly likely to create further adoptions through peer effects. If so, the findings of paper 4 suggest that socially well-connected individuals should be targeted rather than individuals who have the most visible rooftops.

4.3.1. Reforms of existing Swedish policy

A substantial portion of the research behind this thesis relates to existing Swedish institutions, and the results thus lend themselves to some Sweden-specific policy advice. This advice does not involve increased subsidisation, but rather changes in the design of existing subsidy schemes or other advice that does not require increased public spending. The advice relates to issues that were identified in the research *and* that are still present at the time of finishing the thesis (December 2016), which includes the majority of the issues identified in the research.

Paper 1 points to several uncertainties and complexities in the Swedish policy framework that could be addressed. First, the circumstance that more than one subsidy schemes for PV deployment have been running in parallel is an unnecessary complication that creates extra administration and transaction costs for adopters, installation firms and authorities, and that makes it more difficult for (potential) adopters to estimate the economic consequences of PV adoption. At the time of writing (December 2016), three subsidy schemes are running in parallel, as the proposed tax reduction was implemented after the completion of paper 1. Second, it was – and still is – unclear for how long the different subsidy schemes will run. The total budget for PV within these schemes should thus preferably be gathered within one coherent long-term strategy with high predictability and transparency.

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The most important Swedish subsidy scheme for PV deployment – the investment subsidy launched in 2009 – has been flawed with uncertainties. This issue could be addressed through some relatively straightforward reforms. First, the scheme's duration and future remuneration levels should be planned and made transparent. This could be done through the setting of certain conditions to determine the future development of the scheme. For example, it could be decided that investing in a residential PV should yield a certain economic profitability, e.g. an IRR of around 5%. Factors that influence this figure (most importantly the cost development of PV systems) should then be monitored continuously so that remuneration levels can be adapted to keep the profitability at the desired level. Once the profitability reaches the desired level without the need for subsidies, the scheme has served its purpose and should be terminated. Second, measures should be taken to mitigate the long queue of applications awaiting approval. Even though the remuneration level has been reduced to 20% since paper 1 was finished while a substantial amount of long-term funding has been added, the long queue has persisted, resulting in waiting times of up to two years as of November 2016 (Svensk Solenergi, 2016). As regards the market fluctuations caused by discontinuations in the scheme, this problem appears to have been resolved. Even if new discontinuations in the scheme would occur, the current remuneration level of only 20% in combination with reduced prices of PV systems have induced an increased share of the new adopters to purchase the system *before* their application is approved, hoping to get the subsidy retroactively. This secures a more evenly distributed demand for PV systems regardless of any discontinuations in the scheme.

Paper 1 also shows that the tradable green certificates (TGC) scheme, which has been available for PV and other renewables since 2003, has been poorly adapted to residential PV and other modes of micro-production of electricity. To adapt this scheme, the selling of small quantities of certificates could be made easier. This could be achieved for example through the provision of a user-friendly web-based trading platform, or by authorities purchasing certificates at market rates from micro-producers using an automated system (the authorities could then re-sell the certificates in bulk to other actors). Another issue is the high cost for micro-producers of acquiring certificates for self-consumed electricity, as this requires the installation of additional metering equipment. This could – if the TGC scheme is to be intended for micro-producers in the future – be solved through for example relaxed requirements on metering, certificates for self-consumption being granted on the basis of a template, or by providing PV adopters with free metering equipment. However, a burning issue is whether the TGC scheme should be intended at all for micro-production. If so, the scheme should be adapted accordingly. If not, micro-production should be formally excluded from the TGC system (any subsidisation should then be carried out by other means).

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The building permit system could also be reformed. To reduce complexity, rules could be standardised between municipalities. Building permits for residential PV could also be abolished if certain criteria are fulfilled (e.g. that the panels follow the inclination of the roof). Fees could be abolished, or only be due once a permit has been approved (thus reducing uncertainty and risk for prospective adopters). Information on building permits regarding fees, requirements, administration time etc. could be provided on municipalities' websites.

As regards uncertainties regarding tax rules, it was recently (after the completion of paper 1) established that residential PV adopters are under most circumstances indeed not subject to extra taxation and related administration. Any remaining uncertainties could be mitigated by adaptation of rules in a planned, transparent manner, by clear and official statements regarding the intended direction of future reform, or by clarifying official statements regarding how existing rules should be applied.

4.4. Suggestions for further research

In this section, some possible lines of research that could be addressed subsequent to this thesis will be identified. Four potential areas of research will be discussed, one following each paper.

4.4.1. Technological innovation systems (TIS)

As argued in this thesis, there will likely be an increasing need for TIS studies focusing exclusively on the deployment phase of PV (as was done in paper 1) and other technologies. Although this thesis makes some methodological contributions in how to perform such studies (see section 4.2), further methodological development is needed. For example, methods need to be developed regarding how to set system boundaries for geography and value chain based on what phenomena interact in a systemic manner and how different phenomena relate to space. A deployment focus is also likely to have implications regarding the functional dynamics of TISs. The relative importance of different functions might change in some generalisable ways and there might be differences in which functions are important on different geographical scales. New empirical research, or re-analysis of existing TIS literature with a 'new lens', might shed light on these issues.

Conceptual work could also be done regarding how the TIS framework connects to other streams of literature. As observed in this thesis (see section 2.1), the business models framework as well as Rogers' diffusion of innovations framework both fit

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within the scope of the TIS framework and are useful when zooming in on certain key parts of a TIS. These, and perhaps other, frameworks could be more elaborately positioned within the TIS framework in future conceptual work.

4.4.2. Business models and their context

Paper 2 served as a first step in analysing how business models for PV deployment depend on barriers and other contextual factors in different geographical settings. The findings pointed towards a number of factors that appeared to have influenced the success of different business models in the studied markets. However, more research is needed in order to gain a deeper understanding of how and to what extent these and other factors influence the viability of different business models. As an increasing number of PV markets become mature enough to host more elaborate business models, there will be more potential cases to study. Paper 2 could also be complemented through data collection from adopters (surveys, interviews) in the studied markets or in other markets. This could shed light on adopters' motives for preferring a certain business model, and on whether any particular contextual factors influenced their preferences. Furthermore, business models for the deployment of other technologies than PV could be studied in relation to their context. This could yield valuable technology-specific as well as generalisable knowledge regarding the relationship between business models and their context.

4.4.3. Local barriers and drivers

Paper 3 was and early attempt to identify causes of locally elevated adoption rates of residential PV. There are several ways to continue this line of research. First, the adopter perspective could be further explored, e.g. through interviews with adopters in municipalities with high adoption rates. This way, a deeper understanding of factors influencing the different stages of their adoption decision process could be gained. Approaches similar to that developed for paper 3 could also be used to study other settings than the Swedish one. This could reveal to what extent the findings of paper 3 are generalisable; for example, the findings might be specific for early PV markets or for some other characteristic that Sweden shares with certain other settings. Another possibility would be to use statistical regression analyses to compare municipalities or other geographical entities with each other, using PV adoption rates as the dependent variable. This could reveal correlations not visible through case study methodology.

One finding of paper 3 was that local electric utilities supporting PV appeared to have had a substantial positive effect on adoption rates. This could be further explored in different ways. For example, it could be investigated why some utilities

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choose to engage in PV promotion and sales. From a purely economic perspective, promoting PV might appear as a bad decision for utilities as increased PV penetration undermines their source of revenue. Furthermore, PV sales are arguably beyond their core business. Research on incumbent companies in the offshore oil and gas sector that have diversified into wind power suggests that a key reason for this diversification has been to attract the most talented staff for use in their core business (Hansen and Steen, 2015). However, there is as yet little research on the reasons for energy incumbents to engage in renewables, and on whether and under what circumstances such engagement might be economically rational for such organisations.

Furthermore, the role (current and potential) of utilities might differ between countries. For example, utilities are typically highly regulated on the national level, which might create rather different opportunities for utilities in different countries to act beyond their core tasks (and thus to support PV). This could be researched.

Lastly, more research could be done on the role of local information in increasing PV adoption rates. The findings of paper 3 indicated that information seminars have been important in the cases studied, but little is known about what defines successful information dissemination on the local level (e.g. how an information seminar should be designed in order to spur PV adoptions). As information dissemination can be a low-cost intervention, it can (if effective) be a cost-effective way to increase PV uptake. For example, it has been argued that information dissemination has the highest potential to be effective in early markets in which PV is neither very profitable nor clearly unprofitable (Noll et al., 2014), but there is currently little empirical evidence to support this.

4.4.4. Peer effects

This thesis offers an initial attempt to understand the inner workings of peer effects in PV adoption. To build a more solid understanding of the mechanisms behind these peer effects, more qualitative empirical research is needed. Using the approach developed for paper 4 or a similar methodology combining survey and interviews appears to be a fruitful way of moving this research forward. Data could be collected from adopters, non-adopters, or potential adopters in different settings.

Depending on the exact research question and on the expected occurrence of useful information among adopters, representative or purposeful sampling could be used. For example, peer effects could often be expected to be more common in areas with high adoption rates. Thus, any given sample size could yield more useful information through purposeful sampling in such areas. As large samples are costly to manage, purposeful sampling could be beneficial in situations where a

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representative sample is not necessary. Future research could in those cases imitate or be inspired by the sampling strategy developed for the present thesis.

Research could also be done to find out whether and how the characteristics of peer effects vary between different contexts, such as between early and more mature markets. For example, as early adopters are generally more cosmopolite than later adopters (Rogers, 1983), peer effects might be less localised in early markets (as was the case in the studied Swedish early market).

The findings of this thesis raise some doubt as to the role of passive peer effects in PV adoption. In previous literature, these have often been assumed to be an important part of the 'total' peer effects. The importance of the passive component could be assessed by investigating the impact of PV systems' visibility. If, for example, rooftop PV systems facing roads generate substantially larger increases in local adoption rates than PV systems facing backyards, this could indicate a large passive component.

Lastly, the possibilities of utilising peer effects in campaigns could be explored. Is, for example, information provision (e.g. seminars) more effective when adopters are involved? How should they be engaged to make the highest impact: should they give lectures, be available for Q&A sessions, or take part in conversation groups? (As anecdotal evidence, small conversation groups among seminar participants were described as a very important influential factor by one of the interviewees.) Would it be cost-effective to pay them to participate? Are organised study visits to PV adopters' premises a viable strategy? Such alternatives could be investigated, for example through experiments.

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5. Conclusions

This thesis identifies and assesses various barriers and drivers to the deployment of residential PV systems in different geographical contexts. Using a sociotechnical systems approach, the thesis demonstrates how the *technological innovation systems* TIS framework can be amended by the *business models* and the *diffusion of innovations* frameworks to study the deployment of a mature technology (in this case PV) in a catching-up market, treating the development and production of the technology as a 'black box'. On the national level, the analysis shows that the Swedish sociotechnical system for residential PV deployment has been immature and infested by various institutional barriers. Most notably, the Swedish subsidy schemes for PV deployment have been flawed with uncertainties and complexities, and there have been important uncertainties regarding the future development of the Swedish institutional set-up. The results also demonstrate how barriers in different national contexts have affected what kinds of business models for PV deployment that have been viable. On the local level, the results demonstrate how actors such as local electric utilities and private individuals have influenced homeowners to adopt PV through information dissemination and social influence (peer effects). The findings can inform policymakers, firms and other actors as to how to better support PV deployment.

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F7660

Date Submitted	12/3/2018	**Section**	308.4.2	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB79-16

Summary of Modification

clarification of R308.4.2 glazing adjacent to a door, addresses glazing not in plane with the door

Rationale

The current language creates the potential of creating a condition where safety glazing is required if the requirements are read literally. The way that the section is written, it only applies to glass that is within the same plane as the door and perpendicular to plane of the door. If it is anything other than those two locations, it is unclear what is required. For example if the glazing is in a wall that is 45º from the face of the door, neither requirement would apply. This proposal attempts to clear up this confusion. It changes the perpendicular wall to any wall not in the same plane as the door. Therefore, the example discussed above would require that it comply with item #2.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

no impact, clarification

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction

This proposal is a clarification and therefore would not change the cost of construction.

Impact to industry relative to the cost of compliance with code

no impact, clarification

Impact to small business relative to the cost of compliance with code

no impact, clarification

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

clarification of requirement

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

clarification of requirement

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

clarification of requirement

Does not degrade the effectiveness of the code

clarification of requirement

R308.4.2 Glazing adjacent to doors. Glazing in an individual fixed or operable panel adjacent to a door shall be considered to be a hazardous location where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface and it meets either of the following conditions:

1. Where the glazing is within 24 inches(610mm) of either side of the door in the plane of the door in a closed position.
2. Where the glazing is on a wall ~~perpendicular to~~ not in the plane of the door in a closed position and within 24 inches (610 mm) of the hinge side of an in-swinging door.

Exceptions:

1. Decorative glazing.
2. Where there is an intervening wall or other permanent barrier between the door and the glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or lessin depth. Glazing in this application shall comply with Section R308.4.3.
4. Glazing that is adjacent to the fixed panel of patio doors.

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F7662

Date Submitted	12/3/2018	**Section**	310.1	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB89-16 Mod E145-15 proposed for the FBC,Building Volume section 1030 adding exception for R-2 and R-3 and R-4 occupancies

Summary of Modification

Adds an exception for sprinkled building

Rationale

Approval by the IBC Means of Egress Committee was by a margin of 13-1, and the proposal survived 3 public comments from industry groups seeking disapproval. It is inconceivable that the IRC would not want to accept the same proposal, given that rejection of this proposal would make the IRC more restrictive on means of escape from dwelling units than the IBC.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

adds additional options for compliance, not a mandate

Impact to building and property owners relative to cost of compliance with code

adds additional options for compliance, not a mandate, no cost, may even save money if structure already to be sprinkled

Impact to industry relative to the cost of compliance with code

adds additional options for compliance, not a mandate

Impact to small business relative to the cost of compliance with code

adds additional options for compliance, not a mandate

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

adds additional options for compliance, not a mandate, addresses life safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

adds additional options for compliance, not a mandate, addresses life safety

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

adds additional options for compliance, not a mandate, addresses life safety

Does not degrade the effectiveness of the code

adds additional options for compliance, not a mandate, addresses life safety

R310.1 Emergency escape and rescue opening required.

Basements, *habitable attics* and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where *basements* contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a *yard* or court that opens to a public way.

Exceptions:

1. 1.Storm shelters and *basements* used only to house mechanical *equipment* not exceeding a total floor area of 200 square feet (18.58 m2).
2. 2.The emergency escape and rescue opening shall be permitted to open into a screen enclosure, open to the atmosphere, where a screen door is provided leading away from the residence.
3. Where the *dwelling* or *townhouse* is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in *basements* shall not be required to have emergency escape and rescue openings provided that the *basement* has one of the following:
   - 1.1. One means of egress complying with Section R311 and one emergency escape and rescue opening.
   - 1.2. Two means of egress complying with Section R311.

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F7685

Date Submitted	12/4/2018	**Section**	310.3	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB96-16

Summary of Modification

Bulkhead enclosures change wording to area wells, clarification for size, depth, access, drainage and door opening.

Rationale

The language "bulkhead enclosure" has caused confusion for the users of the IRC. There are too many different definitions of what they are. The common use of the term enclosure can be interpreted that the bulkhead must be covered similar to bulkhead enclosures used for storm shelters. We do not believe this was the original intent. The purpose of this change is to clarify the intent of the code and remove the reference to the bulkhead enclosure. We have removed the term and replaced it with area well. The access requirements for an emergency escape and rescue door should not be any different than emergency escape and rescue windows. So, we have duplicated the requirements from the window section to the door section. They are used for the same purpose and should have identical requirements.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

clarification on design making compliance easier

Impact to building and property owners relative to cost of compliance with code

will not impact cost

Impact to industry relative to the cost of compliance with code

will not impact cost

Impact to small business relative to the cost of compliance with code

will not impact cost

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

clarifies design for life safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

clarifies design for life safety

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

clarifies design for life safety

Does not degrade the effectiveness of the code

clarifies design for life safety

R310.3 Emergency escape and rescue doors. Where a door is provided as the required emergency escape and rescue opening, it shall be permitted to be a side-hinged door or a slider. Where the opening is below the adjacent ~~ground elevation~~ grade, it shall be provided with ~~a bulkhead enclosure~~ an area well.

Delete and substitute as follows:

R310.3.2 ~~Bulkhead enclosures~~Area Wells. ~~Bulkhead enclosures shall provide direct access from~~

~~**the basement. The bulkhead enclosure shall provide the minimum net clear opening equal to the door inthe fully open position.**~~

Area wells shall have a width of not less than 36 inches (914 mm). The area of the area well shall allowthe emergency escape and rescue door to be fully opened.

Add new text as follows:

R310.3.2.1 Ladder and steps. Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the door in the fully open position.Ladders or steps required by this section shall not be required to comply with Sections R311.7 andR311.8.Ladders or rungs shall have an inside width of not less than12 inches (305mm), shall project notless than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) oncenter vertically for the full height of the exterior stairwell.

Revise as follows:

~~**R310.3.2.1**~~**R310.3.2.2 Drainage.** ~~Bulkhead enclosures~~ Area wells shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section R405.1 or by an *approved* alternative method.

Exception: A drainage system for ~~bulkhead enclosures~~ area wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R405.1.

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F7687

Date Submitted	12/4/2018	**Section**	311.7.1	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB101-16

Summary of Modification

Handrail design and projection clarification

Rationale

Change to stair width section: The requirement for handrail projection currently included under R311.7.1, Width, is often overlooked. Moving the requirement to the handrail section of the code will provide for better understanding and compliance without changing the requirements for stair width.
New section - Handrail Projection: This new section provides the needed information related to handrail projection within the handrail section to enable: clear recognition of the requirement, compliant design of handrails and improved enforcement of the code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

clarification and helps add consistent interpretations

Impact to building and property owners relative to cost of compliance with code

No impact on cost clarification could reduce cost

Impact to industry relative to the cost of compliance with code

No impact on cost clarification could reduce cost

Impact to small business relative to the cost of compliance with code

No impact on cost clarification could reduce cost

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

clarifies requirement addresses safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

clarifies requirement addresses safety

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

clarifies requirement addresses safety

Does not degrade the effectiveness of the code

clarifies requirement addresses safety

Mod 7687

Revise as follows:

R311.7.1 Width.
Stairways shall be not less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. ~~Handrails shall not project more than 41/2 inches (114 mm) on either side of the stairway and the~~ The clear width of the stairway at and below the handrail height, including treads and landings, shall be not less than 311/2 inches (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.

Exception: The width of spiral stairways shall be in accordance with Section R311.7.10.1.

Add new text as follows:

R311.7.8.5 Handrail Projection Handrails shall not project more than 41/2 inches (114 mm) on either side of the stairway.

Exception: Where nosings of landings, floors, or passing flights project into the stairway reducing the required clearance at passing handrails, the handrail shall project not more than 61/2 inches (165 mm) into the stairway, provided the required stair width and required handrail clearance are not reduced

F7688

Date Submitted	12/4/2018	**Section**	311.7.5.3	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB105-16

Summary of Modification

clarification of nosing

Rationale

This change clearly describes and emphasizes the intent of the requirement to provide consistent nosings and nosing projections at every walking surface throughout the stairway. It combines the maximum rounding and beveling requirements in one sentence and eliminates unnecessary text that is now redundant.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

helps with enforcement

Impact to building and property owners relative to cost of compliance with code

no impact on cost of construction

Impact to industry relative to the cost of compliance with code

no impact on cost of construction

Impact to small business relative to the cost of compliance with code

no impact on cost of construction

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

address nosing clarification helping with safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

strengthens the code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

address nosing clarification

Does not degrade the effectiveness of the code

address nosing clarification

Revise as follows:

R311.7.5.3 Nosings.

~~The~~ Nosings at treads, landings and floors of stairways shall have a radius of curvature at the nosing ~~shall be~~ not greater than 9/16 inch (14 mm) or a bevel not exceeding 1/2 inch (12.7 mm). A nosing projection not less than 3/4 inch (19 mm) and not more than 11/4 inches (32 mm) shall be provided on stairways ~~with solid risers~~. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch (9.5 mm) ~~between two stories, including the nosing at the level of floors and landings~~ within a stairway. ~~Beveling of nosings shall not exceed 1/2 inch (12.7 mm).~~

Exception: A nosing projection is not required where the tread depth is not less than 11 inches (279 mm).

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F7706

Date Submitted	12/5/2018	**Section**	311.7.3	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB103-16

Summary of Modification

change in stairway height

Rationale

Change maximum stairway height to accommodate common height of ceiling and offer more flexibility.
This proposal would allow more flexibility and tolerance, without an increase in hazard. The increased floor to floor height would require 20 risers to not exceed the 7-3/4 inch maximum riser height. But the additional riser would reduce the riser height to 7- 1/2 inches, thus reducing the overall slope of the stair run.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

no impact allows flexibility

Impact to building and property owners relative to cost of compliance with code

No cost impact can often save cost by eliminating additional landing

Impact to industry relative to the cost of compliance with code

No cost impact can often save cost by eliminating additional landing

Impact to small business relative to the cost of compliance with code

No cost impact can often save cost by eliminating additional landing

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

will not effect safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

allow for options and flexibility

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

does not effect materials

Does not degrade the effectiveness of the code

does not degrade the code

R311.7.3 Vertical rise. A flight of stairs shall not have a vertical rise larger than ~~147~~ 151 inches (~~3734~~ 3835.4 mm) between floor levels or landings.

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F7734

Date Submitted	12/6/2018	**Section**	311.7.8	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB107-16

Summary of Modification

The deleted phrase "continuous run of treads" predates the code definition of the term "flight", and is redundant. Flight is defined as: A continuous run of rectangular treads or winders or combination thereof from one landing to another.

Rationale

The deleted phrase "continuous run of treads" predates the code definition of the term "flight", and is redundant. Flight is defined as: A continuous run of rectangular treads or winders or combination thereof from one landing to another. The deletion of the text simplifies the code by sole use of the defined term "flight".

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

no impact, simply update aligning with definitions

Impact to building and property owners relative to cost of compliance with code

no cost impact

Impact to industry relative to the cost of compliance with code

no cost impact

Impact to small business relative to the cost of compliance with code

no cost impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

alignment with current definitions provides the same safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

improves the code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

no effect

Does not degrade the effectiveness of the code

improves the effectiveness of the code

Revise as follows:

R311.7.8 Handrails. Handrails shall be provided on not less than one side of each ~~continuous run of~~ ~~treads or~~ flight with four or more risers.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7734_TextOfModification_1.png

F7735

Date Submitted	12/6/2018	**Section**	312.1.1	**Proponent**	Scott McAdam
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB117.16

Summary of Modification

clarification on location of guards

Rationale

There are two schools of thought about guards when the walking surface is adjacent to a sloping grade. One group says that a guard is only required for that portion of the walking surface that is more than 30 inches above grade. The other group says that if a portion of the walking surface is more than 30 inches above grade the entire walking surface must be provided with a guard. In some circumstances the builder/designer of the walking surface may choose to place the guard all the way around such walking surface for aesthetic reasons. But if the building department is of the opinion that the code regulates the entire guard, correction notices could conceivably be written, for example, for improper spacing within a guard that is only 12 inches above grade. Because the code is not entirely clear and because some code officials interpret the text as applying to the entire walking surface, this amendment is proposed to clarify that guards are only require for those portions of the walking surface that pose a hazard.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

clarification no impact

Impact to building and property owners relative to cost of compliance with code

no cost impact

Impact to industry relative to the cost of compliance with code

no cost impact

Impact to small business relative to the cost of compliance with code

no cost impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

clarification connected to life safety

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

improves code

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

no effect

Does not degrade the effectiveness of the code

improves effectiveness

Font size is indicated as 14 I do not us any smaller. It appears when I submit the Mod in 14 font at your end it is seen smaller. Any suggestions? I have received a few other mod comments back indicating the same thing.

I enlarged the text to 18 font, I keep it set at 14 for all Mod's why is it only sometimes at your end appearing smaller. I appreciate your help but this system is creating a lot of work to simply propose a mod. Thank you

Revise as follows:

R312.1.1 Where required. *Guards* shall be ~~located along~~ provided for those portions of open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or *grade* below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a *guard*.

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Date Submitted	12/9/2018	**Section**	302.2	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No **Alternate Language** No

Related Modifications

Summary of Modification

Adds calculated fire resistance section of FBC-R for two-family dwelling separation

Rationale

The section only permits ASTM E119 or UL 263 To determine the fire-resistance rating of assemblies. The FBC-R permits the use of FBC-B Chapter 7 calculated fire resistance provisions in other sections, including for walls requiring a higher fire-resistance rating. (R302.2 Exception and Table R302.1). Chapter 7 of the FBC-B has prescriptive and calculated fire assemblies that have been successfully used for many years to provide fire-resistant rated construction. While jurisdictions may permit the use as an alternate design, there is no reason to have to go through the extra steps when other sections of the code allow this procedure. This proposal clearly states that a user can use the FBC-B to calculate fire-resistive rated assemblies.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on enforcement of the code. Extends recognized method for providing fire-resistance-rated construction contained in other sections of the FBC-R (R302.2 Exception and Table R302.1).

Impact to building and property owners relative to cost of compliance with code

No impact on property owners. Provides an alternate method for determining the fire-resistance rating. May result in savings passed on by the builder.

Impact to industry relative to the cost of compliance with code

Providing the alternate method permitted in other sections may reduce costs. UF claims a cost reduction of $10,000 per location. (Evaluation of the Cost Impact of 2018 ICC Prescriptive Code Changes, Rinker-CR-2018-103, Final Report 1 June 2018, Rinker School, University of Florida)

Impact to small business relative to the cost of compliance with code

Providing the alternate method permitted in other sections may reduce costs. UF claims a cost reduction of $10,000 per location. (Evaluation of the Cost Impact of 2018 ICC Prescriptive Code Changes, Rinker-CR-2018-103, Final Report 1 June 2018, Rinker School, University of Florida)

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change recognizes a long-standing method for determining the fire-resistance rating of an assembly that is permitted in other sections of the FBC-R.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change will improve the code by assisting enforcement personnel, property owners, industry, and small businesses in applying long-standing methods for the calculation of fire-resistance ratings for assemblies.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code. An equivalent fire resistance rating is yielded by either the calculation or prescriptive method.

R302.3 Two-family dwellings. *Dwelling units* in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E 119 ~~or~~, UL 263 or in accordance with Section 722 of the Florida Building Code-Building. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the *exterior wall*, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.

Exceptions: No change to existing text.

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F7811

Date Submitted	12/10/2018	**Section**	302.4.2	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Adds provisions for listed methods of penetrating a ceiling membrane with luminaries.

Rationale

The proposal adds an additional exception which recognizes the listings of recessed incandescent and fluorescent can lights, or enclosure materials which protect recessed can lights or troffer light fixtures, which have been tested as a ceiling membrane penetration of fire-resistance-rated horizontal assemblies. There are currently twenty-six UL listed can lights which incorporate integral fire protection evaluated for use in fire-resistance-rated horizontal assemblies. Similarly, there are eleven UL listed enclosure materials which have been evaluated for their ability to protect penetrations in ceiling membranes by non-fire rated can lights or troffer light fixtures. (ICC RB54-16)

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on enforcement of the code. The change adds accepted methods for maintaining the fire-resistance-rating at penetrations of ceiling membranes.

Impact to building and property owners relative to cost of compliance with code

No impact on property owners. Provides an accepted method for maintaining fire-resistance rating at penetrations of horizontal membranes. May result in savings passed on by the builder.

Impact to industry relative to the cost of compliance with code

May reduce costs. UF cites reduction of $2,000. Eval. of the Cost Impact of 2018 ICC Prescriptive Code Changes, Rinker-CR-2018-103, Final Report 1 June 2018, Rinker School, University of Florida http://www.floridabuilding.org/fbc/publications/Research_2017-2018/UF/FinalReportCodeCostImpactDraft.pdf

Impact to small business relative to the cost of compliance with code

May reduce costs. UF cites reduction of $2,000. Eval. of the Cost Impact of 2018 ICC Prescriptive Code Changes, Rinker-CR-2018-103, Final Report 1 June 2018, Rinker School, University of Florida http://www.floridabuilding.org/fbc/publications/Research_2017-2018/UF/FinalReportCodeCostImpactDraft.pdf

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by recognizing a tested and accepted method of maintaining the fire-resistance-rating of ceiling membrane penetrations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by recognizing a tested and accepted method of maintaining the fire-resistance-rating of ceiling membrane penetrations.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

R302.4.2 Membrane penetrations. Membrane penetrations shall comply with Section R302.4.1. Where walls are required to have a fire-resistance rating, recessed fixtures shall be installed so that the required fire-resistance rating will not be reduced.

Exceptions:

1. Membrane penetrations of not more than 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches (0.0103 m2) in area provided that the aggregate area of the openings through the membrane does not exceed 100 square inches (0.0645 m2) in any 100 square feet (9.29 m2) of wall area. The annular space between the wall membrane and the box shall not exceed 1/ inch (3.1 mm). Such boxes on opposite sides of the wall shall be separated by one of the following:
   - By a horizontal distance of not less than 24 inches (610 mm) where the wall or partition is constructed with individual noncommunicating stud cavities.
   - By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose-fill, rock wool or slag mineral wool insulation.
   - By solid fireblocking in accordance with Section R302.11.
   - By protecting both boxes with *listed* putty pads.
   - By other *listed* materials and methods.
2. Membrane penetrations by *listed* electrical boxes of any materials provided that the boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the *listing*. The annular space between the wall membrane and the box shall not exceed 1 / inch (3.1 mm) unless *listed* otherwise. Such boxes on opposite sides of the wall shall be separated by one of the following:
   - By the horizontal distance specified in the *listing* of the electrical boxes.
   - By solid fireblocking in accordance with Section R302.11.
   - By protecting both boxes with *listed* putty pads.
   - By other *listed* materials and methods.

The annular space created by the penetration of a fire sprinkler provided that it is covered by a metal escutcheon plate.

4. Ceiling membrane penetrations by listed luminaires or by luminaires protected with listed materials, that have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.

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F7812

Date Submitted	12/10/2018	**Section**	308.4.2	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Changes "perpendicular" to "not in" when referring to glazing adjacent to doors.

Rationale

The current language is confusing and has the potential of creating a condition where the requirement for safety glazing may be missed by reading the requirements literally. The way that the section is written, it only applies to glazing that is within the same plane as the door or perpendicular to the plane of the door. If it is anything other than those two locations, it is unclear what is required. For example, if the glazing is in a wall that is 45º from the face of the door, neither requirement would apply. This proposal attempts to clear up this confusion and increase safety. It changes the perpendicular wall to any wall not in the same plane as the door and retains the within 24 inches criteria. Therefore, the example discussed above would require that it comply with item #2 if the glazing is within 24 inches of the hinge side of an in-swinging door even though the wall is not perpendicular to the plane of the door.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The change simplifies the provision and should make enforcement easier because all parties will have a clear understanding of what is required.

Impact to building and property owners relative to cost of compliance with code

No impact on property owners.

Impact to industry relative to the cost of compliance with code

No impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety simplifying a confusing provision of the code resulting in a greater likelihood of safe installations

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by eliminating confusion which may lead to an unsafe condition.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

R308.4.2 Glazing adjacent to doors. Glazing in an individual fixed or operable panel adjacent to a door shall be considered to be a hazardous location where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface and it meets either of the following conditions:

1. Where the glazing is within 24 inches (610 mm) of either side of the door in the plane of the door in a closed position.
2. Where the glazing is on a wall ~~perpendicular~~ to not in the plane of the door in a closed position and within 24 inches (610 mm) of the hinge side of an in-swinging door.

Exceptions:

1. Decorative glazing.
2. Where there is an intervening wall or other permanent barriers between the door and the glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with Section R308.4.3.
4. Glazing that is adjacent to the fixed panel of patio doors.

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F7813

Date Submitted	12/10/2018	**Section**	308.4.2	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	Yes

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Replace Mod 7812 with this mod.

Relates to glazing adjacent to doors.

Summary of Modification

Simplifies requirements related to glazing adjacent to doors.

Rationale

I am sorry, I missed the Public Comment 1 which was approved in Mod 7812. The Public Comment goes even further in simplifying the section and I am submitting this in lieu of 7812 which I will withdraw at the appropriate time.

The current language is confusing and has the potential of creating a condition where the requirement for safety glazing may be missed by reading the requirements literally. The way that the section is written, it only applies to glazing that is within the same plane as the door or perpendicular to the plane of the door. If it is anything other than those two locations, it is unclear what is required. For example, if the glazing is in a wall that is 45º from the face of the door, neither requirement would apply. This proposal attempts to clear up this confusion and increase safety. It changes the perpendicular wall to any wall not in the same plane as the door and retains the 24 inches criteria. Therefore, the example discussed above would require that it comply with item #2 if the glazing is within 24 inches of the hinge side of an in-swinging door even though the wall is not perpendicular to the plane of the door. The Reason provided by the proponent of Public Comment 1 with drawings is uploaded as a Support File.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The change simplifies the provision making enforcement easier because all parties will have a clear understanding of what is required.

Impact to building and property owners relative to cost of compliance with code

No impact on property owners.

Impact to industry relative to the cost of compliance with code

No impact.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety simplifying a confusing provision of the code resulting in a greater likelihood of safe installations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by eliminating confusion which may lead to an unsafe condition.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

R308.4.2 Glazing adjacent to doors. Glazing in an individual fixed or operable panel adjacent to a door shall be considered to be a hazardous location where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface and it meets either of the following conditions:

1. Where the glazing is within 24 inches (610mm) of either side of the door in the plane of the door in a closed position.
2. Where the glazing is on a wall ~~perpendicular to~~ less than 180 degrees from the plane of the door in a closedposition and within 24 inches (610 mm) of the hinge side of an in-swinging door.

Exceptions:

1. Decorative glazing.
2. Where there is an intervening wall or other permanent barrier between the door and the glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with Section R308.4.3.
4. Glazing that is adjacent to the fixed panel of patio doors.

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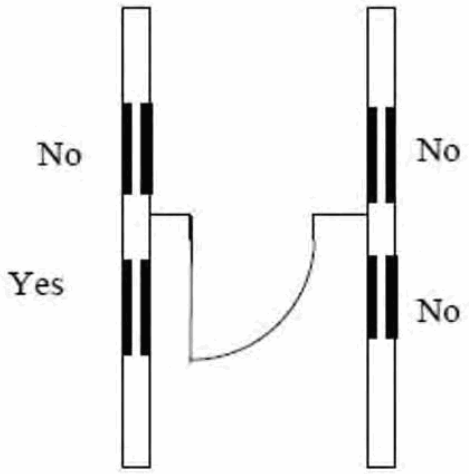
Commenter's Reason: This public comment clarifies when safety glazing is required for an in-swinging door. The original requirement was introduced into the 2015 IRC through code change proposal RB111-13. Based on the figures included in the reason statement (one of which is reproduced below) and the discussions on the proposal, our understanding is the concern being addressed by this provision is that a person can get pinned between the door and the wall, forcing the person against the glazing. The requirement safety glazing in this particular provision is not to address trip/fall/slip hazards, else it wouldn't only be required on the hinge side of the in-swinging door as shown in the figure for RB111-13



However, this proposed change can be interpreted to apply to situations where there is no danger of pinning a person between the door and the window. The figure below illustrates a situation where the wall bends away from the hinge side of the door. In this case, the door swing will be limited by the hinges and the walls, and there is no hazard from the door, but given the text of this proposal only refers to "not in the plane" of the door, safety glazing would be required in the window as shown.

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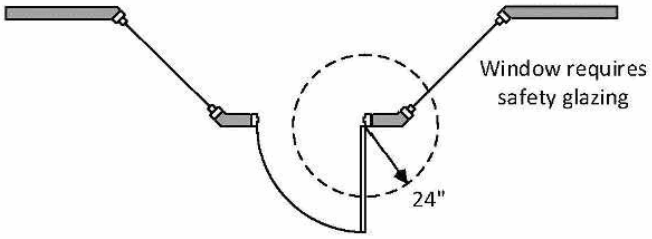

The proposed modification will clarify that only if the window is in a position where a person can get pushed against the window by a door, will safety glazing be required.

The change to the exceptions is purely editorial. As the text appeared in the 2015 IRC, it is unclear if the exceptions only apply to Item 2. cdpACCESS accentuates the appearance by further indenting the exceptions. The context of the exceptions makes it clear they apply to both Items 1 and 2. The change is only to remove the indent, to clarify the exceptions apply to both items in this section.

Final Action Results

RB79-16 **AMPC1**

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F7814

Date Submitted	12/10/2018	**Section**	308.4.7	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Expand and simplify Figure 308.4.7

Rationale

This proposal is intended to provide information on Figure R308.4.7 with two callouts that describe the meaning of the figure, consistent with the text of Section R308.4.7. In addition, as figure titles are not enforceable, an editorial change is proposed to the title of the figure to more accurately reflect the meaning. Lastly, we have adjusted the 60 inch dimension at the landing for clarity. (ICC RB73-16 - Proponent: ICC Building Code Action Committee.)

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The change simplifies the provision making enforcement easier because all parties will have a clear understanding of what is required

Impact to building and property owners relative to cost of compliance with code

No impact on property owners.

Impact to industry relative to the cost of compliance with code

No impact

Impact to small business relative to the cost of compliance with code

No impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety simplifying confusing provisions of the code resulting in a greater likelihood of safe installations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by eliminating confusion which may lead to an unsafe condition.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

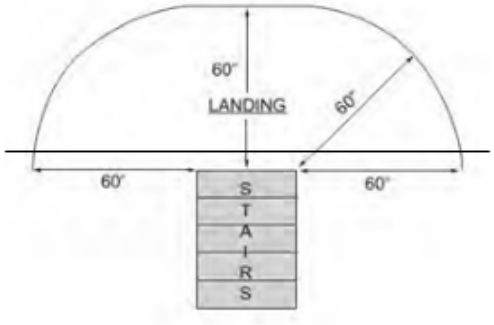
Does not degrade the effectiveness of the code

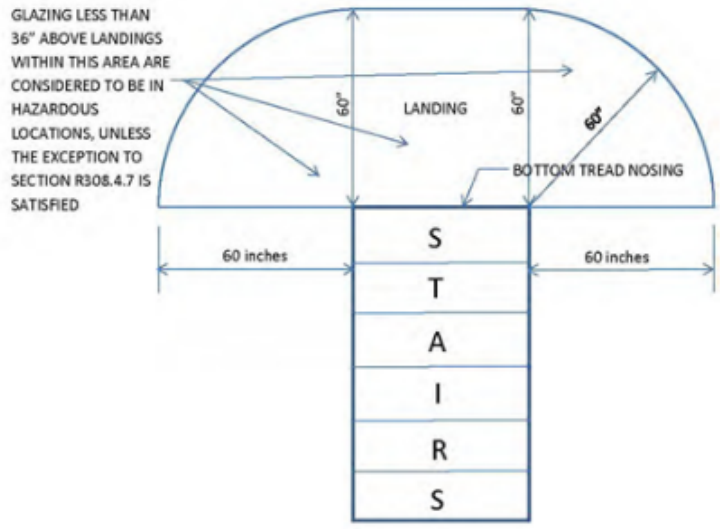
The proposed change upgrades the effectiveness of the code.

Mod 7814

FIGURE R308.4.7

~~PROHIBITED~~ HAZARDOUS GLAZING LOCATIONS AT BOTTOM STAIR LANDINGS





F7815

Date Submitted	12/10/2018	**Section**	311.7.3	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Increases allowable vertical rise of stairs to 151 inches.

Rationale

(Note: Reason is as provided by ICC proponent. Proponent's request for rise of 150 inches was increased to 151 inches by the Code Action Committee. JDB)

Many custom and larger tract homes desire a 10 foot ceiling height and use 24 inch floor trusses. With actual wall framing height of approximately 10 foot 1 inch, using nominal dimensioned lumber, and a sub floor thickness of 1-2 inches. This does not allow for any variation in thickness for premium floor finishes, nor construction tolerances, which could put the stairs out of compliance and require a landing. By giving some additional tolerance in the dimension the construction will have the same look and feel without creating an inconvenience to the home builder.
The 2015 IRC modified this from the previous 144 inches (3658 mm) to allow 147 inches (3734 mm); under code proposal RB132-13. This proposal would allow more flexibility and tolerance, without an increase in hazard. The increased floor to floor height would require 20 risers to not exceed the 7-3/4 inch maximum riser height. But the additional riser would reduce the riser height to 7- 1/2 inches, thus reducing the overall slope of the stair run.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No fiscal impact on property owners. Will allow greater flexibility in design.

Impact to industry relative to the cost of compliance with code

Increases flexibility for design and construction with no fiscal impact.

Impact to small business relative to the cost of compliance with code

Increases flexibility for design and construction with no fiscal impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by allowing greater flexibility in the design and construction of stairs with no reduction in safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by allowing greater flexibility in the design and construction of stairs with no reduction in safety.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

R311.7.3 Vertical rise. A flight of stairs shall not have a vertical rise larger than ~~147~~ 151 inches (~~3734~~ 3835 mm) between floor levels or landings.

http://www.floridabuilding.org/Upload/Modifications/Rendered/Mod_7815_TextOfModification_1.png

F7816

Date Submitted	12/10/2018	**Section**	311.7.11	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

311.7.12

Summary of Modification

Allows alternating tread devices in areas with low occupancy,

Rationale

(Note: Reason is as provided by ICC proponent. JDB)

It is not uncommon to see small lofts or mezzanines in single family dwelling units. Providing a full stairway to these areas is onerous because the required floor area for the stairway may significantly reduce the usable square footage in the house. There is a growing popularity for so-called tiny houses and other smaller residences. This code change would provide a legal and safe way to access a small loft area typically provided for these homes. The proposal includes an exclusion for kitchens and bathrooms where the only access is via the alternating tread device or ships ladder. This is done to ensure that access to and egress from these facilities will be via a normal stair or from the main floor of the dwelling unit.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

May lead to cost reduction via builder.

Impact to industry relative to the cost of compliance with code

Reduces cost $2,000.00 per location per UF. (Evaluation. of the Cost Impact of 2018 ICC Prescriptive Code Changes, Rinker-CR-2018-103, Final 1 June 2018, Rinker School, University of Florida) http://www.floridabuilding.org/fbc/publications/Research_2017-018/UF/FinalReportCodeCostImpactDraft.pdf

Impact to small business relative to the cost of compliance with code

Reduces cost $2,000.00 per location per UF. (Evaluation. of the Cost Impact of 2018 ICC Prescriptive Code Changes, Rinker-CR-2018-103, Final 1 June 2018, Rinker School, University of Florida) http://www.floridabuilding.org/fbc/publications/Research_2017-018/UF/FinalReportCodeCostImpactDraft.pdf

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by allowing an alternate to stairs in areas of low occupancy with no reduction in safety,

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by allowing an alternate to full-fledged stairs in small buildings or areas with low occupancy with no reduction in safety.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

R311.7.11 Alternating tread devices. Alternating tread devices shall not be used as an element of a means of egress. Alternating tread devices shall be permitted provided that the required means of egress stairway or ramp serves the same space at each adjoining level or where a means of egress is not required. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

Exception: Alternating tread devices are allowed to be used as an element of a means of egress for lofts, mezzanines, and similar areas of 200 gross square feet or less and not providing exclusive access to a kitchen or bathroom.

R311.7.12 Ships ladders. Ships ladders shall not be used as an element of a means of egress. Ships ladders shall be permitted provided that a required means of egress stairway or ramp serves the same space at each adjoining level or where a means of egress is not required. The clear width at and below the handrails shall be not less than 20 inches.

Exception: Ships ladders are allowed to be used as an element of a means of egress for lofts, mezzanines, and similar areas of 200 gross square feet or less and not providing exclusive access toa kitchen or bathroom.

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F7817

Date Submitted	12/10/2018	**Section**	316.5.4	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Use of fiber-cement panel, soffit, or backer board as a thermal barrier.

Rationale

(Note: Reason is as provided by ICC proponent. JDB)

During the previous IRC code cycle (INTERNATIONAL CODE COUNCIL 2012 - 2014 CODE DEVELOPMENT CYCLE Group B (2013)) RB168-13 was approved and thereby added "1/4-inch fiber-cement panels" to the 2015 IRC R316.5.3 subsection 3.8 as an approved ignition barrier material (used in attics). In further support, the 2015 IBC Section 2603.5.7 includes ¼-inch thick fiber-cement as an ignition barrier over foam plastic sheathing.
By definition, ¼-inch fiber-cement panel complying with ASTM C1186, Type A, or ASTM C1288, or ISO 8336, Category C, has a flame spread of 0 and smoke developed index of 5 or less. In addition, the IBC (Sec. 1405.16) Fiber-cement siding ASTM C1186, Type A or ISO 8336, Category C shall be permitted on exterior walls of Type I, II, III, IV and V construction.
Lastly attached are two test reports (SwRI Project number 01.16924.01.219a & 01.12924.01.219b[1]) originally submitted as substantiating data the supported the approval of RB168-13 (Group B 2013) and FS128-12 (Group A 2013). Both reports conclude that the wall assemblies did not exhibit sustained flaming, thus meeting the acceptance criteria described in NFPA 268, Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source.

Bibliography: Performance Evaluation of a Fiber Cement Board and Spray Foam Wall Assembly in Accordance with NFPA 268, 2012 Edition, Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Energy Source, SwRI Project number 01.16924.01.219a, October 19th, 2012.
Performance Evaluation of a Fiber Cement Board and Rigid Foam Wall Assembly in Accordance with NFPA 268, 2012 Edition, Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Energy Source, SwRI Project number 01.12924.01.219b[1], November 27th, 2012.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No impact on property owners. May lead to cost reduction based on materials used.

Impact to industry relative to the cost of compliance with code

May result in cost reduction based on materials used.

Impact to small business relative to the cost of compliance with code

May result in cost reduction based on materials used.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by allowing an alternate material of proven equivalency to be used as a thermal barrier.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change improves the code by allowing an alternate material of proven equivalency to be used as a thermal barrier.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code.

R316.5.4 Crawl spaces. The thermal barrier specified in Section R316.4 is not required where all of the following apply:

1. Crawl space access is required by SectionR408.4

2. Entry is made only for purposes of repairs or maintenance.

3. The foam plastic insulation has been tested in accordance with Section R316.6 or the foam plastic insulation is protected against ignition using one of the following ignition barrier materials:

3.1. 1-½ inch-thick (38 mm) mineral fiber insulation;

3.2. ¼ inch-thick (6.4 mm) wood structural panels;

3.3 3/8 inch (9.5 mm)particleboard;

3.4. ¼ inch (6.4 mm)hardboard;

3.5 3/8 inch (9.5 mm) gypsum board; or

3.6. Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

3.7. .¼ inch (6.4 mm) fiber-cement panel, soffit or backer board.

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F7862

Date Submitted	12/10/2018	**Section**	316	**Proponent**	Jon Roberts
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

This code change is an editorial change intended to help understand the code section by adding separation into the sentence structure.

Rationale

This proposal is editorial in nature and is intended to clarify that foam plastic used in applications other than as a component in manufactured assemblies does require a flame spread index of not more than 75 and a smoke-developed index of not more than 450 w hen tested in the maximum thickness and density intended for use in accordance with ASTM E84 or UL 723. As written, Section R316.3 is being interpreted by some that it applies only to foamed plastic used as a component in manufactured assembles.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal is editorial in nature and is intended to clarify the code related to foam plastics.

Impact to building and property owners relative to cost of compliance with code

This proposal is editorial in nature and is intended to clarify the code there is no cost impact.

Impact to industry relative to the cost of compliance with code

This proposal is editorial in nature and is intended to clarify the code there is no cost impact.

Impact to small business relative to the cost of compliance with code

This proposal is editorial in nature and is intended to clarify the code there is no cost impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal is editorial in nature and is intended to clarify the code so that it is more easily understood and enforced thereby ensuring proper enforcement and added safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal is editorial in nature and is intended to clarify and improve the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal is editorial in nature only and does not discriminate in any way.

Does not degrade the effectiveness of the code

This proposal is editorial in nature and is intended to clarify the code there is no degradation as a result.

R316.3 Surface burning characteristics.

Unless otherwise allowed in Section R316.5, foam plastic or foam plastic cores used as a component in manufactured assemblies used in building construction shall have a flame spread index of not more than 75 and shall have a smoke developed index of not more than 450 when tested in the maximum thickness and density intended for use in accordance with ASTM E 84 or UL 723. Loose-fill-type foam plastic insulation shall be tested as board stock for the flame spread index and smoke-developed index.

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F7870

Date Submitted	12/10/2018	**Section**	302.4.2	**Proponent**	Jon Roberts
Chapter	3	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

714.4.2 of the Building Code

Summary of Modification

This code change adds an additional exception to the membrane penetration compliance section and aligns with a proposal related to section 714.4.2 of the building code.

Rationale

The proposal adds an additional exception which recognizes the listings of recessed incandescent and fluorescent can lights, or enclosure materials which protect recessed can lights or troffer light fixtures, that have been tested as a ceiling membrane penetration of fire-resistance-rated horizontal assemblies. There are currently twenty six UL listed can lights which incorporate integral fire protection which have been evaluated for use in fire-resistance-rated horizontal assemblies. Similarly there are eleven UL listed enclosure materials which have been evaluated for their ability to protect penetrations in ceiling membranes by non fire rated can lights or troffer light fixtures.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This allows another option to meet the requirements of rate membrane penetrations. This flexibility makes enforcement of the code easier by allowing an exception that still meets the intent of the code.

Impact to building and property owners relative to cost of compliance with code

The impact is that it provides additional options so it will not increase cost.

Impact to industry relative to the cost of compliance with code

The impact is that it provides additional options so it will not increase cost.

Impact to small business relative to the cost of compliance with code

The impact is that it provides additional options so it will not increase cost.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

These products are already in use within the construction industry so it will allow the continuation of this use and improve the safety overall.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

These products are already in use within the construction industry so adding this into the code as an option will strengthen the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate and these products are already in use within the construction industry.

Does not degrade the effectiveness of the code

These products are already in use within the construction industry so it will allow the continuation of this use and improve the code overall.

R302.4 - Add exception 4 as follows:

4. Ceiling membrane penetrations by listed luminaires or by luminaires protected with listed materials, that have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.

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Date Submitted	12/12/2018	**Section**	302.1	**Proponent**	Joseph Belcher for FHBA
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Adds alternate materials for protecting the underside of projections.

Rationale

Reason: The proposal will bring the IRC and the IBC into agreement. Currently, the IBC provides options while the IRC has only one method of compliance.

The IBC in Section 705.2.3 permits the use of Type IV construction, fire-retardant-treated wood or 1-hr fire-resistance construction for combustible projections. The IRC in Table R302.1(1) and Table R302.1(2) only permits the 1-hr fire-resistance construction on the underside. There is no 1-hr. fire-resistance assembly listed for roof eaves. As a result, users of the International Residential Code are looking to the International Building Code for compliance with the requirement.

Cost Impact: Will not increase the cost of construction
The change only provides options. It does not mandate any requirements not permitted by ICC codes.

(Note: The modification was modified by the Committee to change Type IV construction to heavy timber and the change was Approved as Modified. The Committee Reason follows. JDB)
Committee Reason: The modification deletes a term that is not used in the code and replaces it with one that is used. The proposal offers a good solution for projections.

JDB - The change provides another alternate to the builder.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact.

Impact to building and property owners relative to cost of compliance with code

No impact on property owners. May lead to cost reduction based on materials used.

Impact to industry relative to the cost of compliance with code

Provides additional options and may result in cost reduction based on materials used.

Impact to small business relative to the cost of compliance with code

Provides additional options and may result in cost reduction based on materials used.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The change impacts public health and safety by allowing an alternate material of proven equivalency to be used.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The change impacts public health and safety by allowing an alternate material of proven equivalency to be used.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The change does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

The proposed change upgrades the effectiveness of the code by allowing the use of additional materials to accomplish the purpose.

TABLE R302.1 EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from outside or calculated per *Florida Building Code-Building*	0 feet
	Not fire-resistance rated	0 hours	3 feet[a]
Projections	Not allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood.[b, c]	2 feet[a]
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet[a]
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet[a]

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

a. For residential subdivisions where all *dwellings* are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the *fire separation distance* for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining *lot* provides an open setback *yard* that is 6 feet or more in width on the opposite side of the property line.

b. The roof eave fire-resistanceratingshallbepermittedtobereducedto0hoursontheundersideoftheeaveiffireblockingisprovidedfromthewalltopplatetotheundersideoftheroof sheathing.

c. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.

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F7711

Date Submitted	12/6/2018	**Section**	703.14.3	**Proponent**	Ann Russo1
Chapter	7	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Add flame spread index provision for polypropylene siding.

Rationale

This proposal adds the requirements contained in FBC Building. The flame spread requirement is consistent with the requirements for wood and vinyl.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will improve the enforcement of the code that is consistent with other approved materials and requirements found FBC Building.

Impact to building and property owners relative to cost of compliance with code

Will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

Will not increase the cost of construction.

Impact to small business relative to the cost of compliance with code

Will not increase the cost of construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The added requirements are consistent with those in the FBC Building requirements to ensure safe use of polypropylene siding.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal will improve the application of the requirements found in FBC Building.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal will not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal will improve the effectiveness of the code.

Revise as follows:

R703.14 Polypropylene siding.

Polypropylene siding shall be certified and labeled as conforming to the requirements of ASTM D7254 and those of Section R703.14.3 by an approved quality control agency and shall conform to the fire separation distance requirements of Section R703.14.2.

Add new text as follows:

R703.14.3 Flame spread index.

The certification of the *flame spread index* shall be accompanied by a test report stating that all portions of the test specimen ahead of the flame front remained in position during the test in accordance with ASTM E84 or UL 723.

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Date Submitted	12/10/2018	**Section**	902	**Proponent**	Jon Roberts
Chapter	9	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments **No** **Alternate Language** **No**

Related Modifications

Summary of Modification

This proposal adds a section to the code related to rooftop mounted photovoltaic panel systems. It requires rooftop mounted panel systems to be listed and identified with a fire classification in accordance with UL 1703 and UL 2703.

Rationale

This code change simply provides the appropriate method for testing photovoltaic panel systems for fire classification, as required by the ANSI standards. This method is already in use within the industry.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This method is already in use within the industry therefore there is no impact to the enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

This method is already in use within the industry therefore there is no additional cost to construction.

Impact to industry relative to the cost of compliance with code

This method is already in use within the industry therefore there is no additional cost to construction.

Impact to small business relative to the cost of compliance with code

This method is already in use within the industry therefore there is no additional cost to construction.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This method is already in use and helps to maintain the safety of these systems.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This improves the code by adding additional language for use by the building official relative to roof top mounted solar panel systems.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate against other equivalent methods.

Does not degrade the effectiveness of the code

This method is already in use within the industry therefore there is no degradation of the code.

R902.4 Rooftop-mounted photovoltaic ~~panels and modules~~ panel systems.

Rooftop-mounted *photovoltaic panel systems* installed on or above the roof covering shall be tested, listed and identified with a fire classification in accordance with UL 1703 and UL 2703. Class A, B or C *photovoltaic panel systems* and modules shall be installed in jurisdictions designated by law as requiring their use or where the edge of the roof is less than 3 feet (914 mm) from a lot line.

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F8042

Date Submitted	12/12/2018	**Section**	1005.8	**Proponent**	Ann Russo8
Chapter	10	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

RB359-16

Summary of Modification

ADDS A CODE SECTION TO REQUIRE INSULATION SHIELDS FOR FACTORY-BUILT CHIMNEYS AS IS NOW REQUIRED IN THE CODE FOR VENTS.

Rationale

The codes currently require insulation shields for vents to ensure proper clearance to insulation so as not to cause a fire hazard, the code should also require insulation shields for factory-built chimneys as they also require clearance to insulation and it represents a fire hazard when one is not installed.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clarification of code only so there should be no effect on code enforcement.

Impact to building and property owners relative to cost of compliance with code

Should not increase cost as the insulation shield should already be used.

Impact to industry relative to the cost of compliance with code

Should not increase cost as the insulation shield should already be used.

Impact to small business relative to the cost of compliance with code

Should not increase cost as the insulation shield should already be used.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The insulation shield should already be used, however, when the code does not specifically call it out as required many times it gets overlooked so this will improve he life safety.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

It represents a fire hazard when one is not installed so this clarification should improve the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Clarification only so does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

Clarification only so does not degrade the effectiveness of the code.

Section: R1005.8 (New)

Add new text as follows:

R1005.8 Insulation shield. Where factory-built chimneys pass through insulated assemblies, an insulation shield constructed of steel having a minimum thickness of 0.0187 inch (0.4712 mm) (No. 26 gage) shall be installed to provide *clearance* between the chimney and the insulation material.
The *clearance* shall not be less than the *clearance* to combustibles specified by the chimney manufacturer's installation instructions. Where chimneys pass through attic space, the shield shall terminate not less than 2 inches (51 mm) above the insulation materials and shall be secured in place to prevent displacement. Insulation shields provided as part of a *listed* chimney system shall be installed in accordance with the manufacturer's installation instructions.

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F7942

Date Submitted	12/11/2018	**Section**	101.1	**Proponent**	Brad Schiffer
Chapter	Appendix Q	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments No

Alternate Language No

Related Modifications

Summary of Modification

Provides regulations for this additional type of housing if adopted by local ordinance.

Rationale

Appendix Q relaxes various requirements in the body of the code as they apply to houses that are 400 square feet in area or less. Attention is specifically paid to features such as compact stairs, including stair handrails and headroom, ladders, reduced ceiling heights in lofts and guard and emergency escape and rescue opening requirements at lofts.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Provide guidance for communities that want to explore this type of housing.

Impact to building and property owners relative to cost of compliance with code

Provide guidance for communities that want to explore this type of affordable housing.

Impact to industry relative to the cost of compliance with code

Provide guidance for communities that want to explore this type of less costly affordable housing.

Impact to small business relative to the cost of compliance with code

Provide guidance for small business in communities that want to explore this type of less costly affordable housing.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Provide guidance for communities that want to explore this type of safe affordable housing.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provide guidance for communities that want to explore this method of affordable housing.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not.

Does not degrade the effectiveness of the code

Does not.

APPENDIX Q ~~RESERVED~~ TINY HOUSES

SECTION AQ101 GENERAL

AQ101.1 Scope. This appendix shall be applicable to tiny houses used as single dwelling units. Tiny houses shall com-ply with this code except as otherwise stated in this appendix.

SECTION AQ102 DEFINITIONS

AQ102.1 General. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of this code for general definitions.

EGRESS ROOF ACCESS WINDOW. A skylight or roof window designed and installed to satisfy the emergency escape and rescue opening requirements of Section R310.2.

LANDING PLATFORM. A landing provided as the top step of a stairway accessing a loft.

LOFT. A floor level located more than 30 inches (762 mm) above the main floor, open to the main floor on one or more sides with a ceiling height of less than 6 feet 8 inches (2032mm) and used as a living or sleeping space.

TINY HOUSE. A dwelling that is 400 square feet (37 m2) or less in floor area excluding lofts.

SECTION AQ103 CEILING HEIGHT

AQ103.1 Minimum ceiling height. Habitable space and hallways in tiny houses shall have a ceiling height of not less than 6 feet 8 inches (2032 mm). Bathrooms, toilet rooms and kitchens shall have a ceiling height of not less than 6 feet 4 inches (1930 mm). Obstructions including, but not limited to, beams, girders, ducts and lighting, shall not extend below these minimum ceiling heights.

Exception: Ceiling heights in lofts are permitted to be less than 6 feet 8 inches (2032 mm).

SECTION AQ104 LOFTS

AQ104.1 Minimum loft area and dimensions. Lofts used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections AQ104.1.1 through AQ104.1.3.

AQ104.1.1 Minimum area. Lofts shall have a floor area of not less than 35 square feet (3.25 m2).

AQ104.1.2 Minimum dimensions. Lofts shall be not less than 5 feet (1524 mm) in any horizontal dimension.

AQ104.1.3 Height effect on loft area. Portions of a loft with a sloped ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.

Exception: Under gable roofs with a minimum slope of 6 units vertical in 12 units horizontal (50-percent slope), portions of a loft with a sloped ceiling measuring less than 16 inches (406 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.

AQ104.2 Loft access. The access to and primary egress from lofts shall be of any type described in Sections AQ104.2.1 through AQ104.2.4.

AQ104.2.1 Stairways. Stairways accessing lofts shall comply with this code or with Sections AQ104.2.1.1 through AQ104.2.1.5.

AQ104.2.1.1 Width. Stairways accessing a loft shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The width below the handrail shall be not less than 20 inches (508 mm).

AQ104.2.1.2 Headroom. The headroom in stairways accessing a loft shall be not less than 6 feet 2 inches(1880 mm), as measured vertically, from a sloped line connecting the tread or landing platform nosings in the middle of their width.

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AQ104.2.1.3 Treads and risers. Risers for stairs accessing a loft shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:

1. The tread depth shall be 20 inches (508 mm) minus four-thirds of the riser height.
2. The riser height shall be 15 inches (381 mm) minus three-fourths of the tread depth.

AQ104.2.1.4 Landing platforms. The top tread and riser of stairways accessing lofts shall be constructed as a landing platform where the loft ceiling height is less than 6 feet 2 inches (1880 mm) where the stairway meets the loft. The landing platform shall be 18 inches to 22 inches (457 to 559 mm) in depth measured from the nosing of the landing platform to the edge of the loft, and 16 to 18 inches (406 to 457 mm) in height measured from the landing platform to the loft floor.

AQ104.2.1.5 Handrails. Handrails shall comply with Section R311.7.8.

AQ104.2.1.6 Stairway guards. Guards at open sides of stairways shall comply with Section R312.1.

AQ104.2.2 Ladders. Ladders accessing lofts shall comply with Sections AQ104.2.1 and AQ104.2.2.

AQ104.2.2.1 Size and capacity. Ladders accessing lofts shall have a rung width of not less than 12 inches(305 mm), and 10-inch (254 mm) to 14-inch (356 mm)spacing between rungs. Ladders shall be capable of supporting a 200-pound (75 kg) load on any rung. Rung spacing shall be uniform within 3/8 inch (9.5 mm).

AQ104.2.2.2 Incline. Ladders shall be installed at 70 to 80 degrees from horizontal.

AQ104.2.3 Alternating tread devices. Alternating tread devices accessing lofts shall comply with Sections R311.7.11.1 and R311.7.11.2. The clear width at and below the handrails shall be not less than 20 inches (508mm).

AQ104.2.4 Ships ladders. Ships ladders accessing lofts shall comply with Sections R311.7.12.1 and R311.7.12.2. The clear width at and below handrails shall be not less than 20 inches (508 mm).

AQ104.2.5 Loft Guards. Loft guards shall be located along the open side of lofts. Loft guards shall be not less than 36 inches (914 mm) in height or one-half of the clear height to the ceiling, whichever is less.

SECTION AQ105 EMERGENCY ESCAPE AND RESCUE OPENINGS

AQ105.1 General. Tiny houses shall meet the requirements of Section R310 for emergency escape and rescue openings.

Exception: Egress roof access windows in lofts used as sleeping rooms shall be deemed to meet the requirements of Section R310 where installed such that the bottom of the opening is not more than 44 inches (1118 mm) above the loft floor, provided the egress roof access window complies with the minimum opening area requirements of Section R310.2.1.

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F7456

Date Submitted	11/26/2018	**Section**	107.1.1	**Proponent**	Richard Schauland
Chapter	Appendix S	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

This appendix was added to the code last cycle. The fire test reports provided by the submitter stated that the bales tested had a density of 7.5 pcf. This section currently mandates a minimum bale density of 6.5 pcf. So, the appendix currently permits a 1- hour or 2-hour fire resistance rating for assemblies which have not demonstrated this level of performance in fire tests.

The ASTM E119 test involves measuring the temperature on the unexposed side of the specimen when it is exposed to heat from a furnace. A more dense bale will delay the temperature rise on the unexposed side and perform better in this test. As such, the fire test provided does not represent the worst case scenario, as it should.

Therefore, the 1-hour or 2-hour fire resistance rating should only be assigned to walls with bale density of at least 7.5 pcf, as no fire test data has been provided for bales of lesser density.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There may be little impact to local entities relative to the enforcement of the code. Local entities would have to verify that the bales meet the requirement through documentation provided.

Impact to building and property owners relative to cost of compliance with code

This proposal may increase the cost of construction if a user intended to build a 1-hour or 2-hour rated wall with bales of a density less than 7.5 pcf.

Impact to industry relative to the cost of compliance with code

This proposal may increase the cost of construction if a user intended to build a 1-hour or 2-hour rated wall with bales of a density less than 7.5 pcf.

Impact to small business relative to the cost of compliance with code

There will no impact to small business because this proposal is for residential buildings only.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposal will ensure the safety and welfare of the general public by ensuring that the 1-hour or 2-hour rated walls are rated as tested.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does strengthen the Code, it ensures that the rated walls are built as tested.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by ensuring the rated wall is built as tested.

1st Comment Period History

F7456-G1

Proponent Richard Schauland **Submitted** 1/2/2019 **Attachments** No

Comment:

Mod. 7457 is related to this Mod.

AS107.1.1 One-hour rated clay plastered wall. One-hour fire-resistance-rated nonload-bearing clay plastered strawbale walls shall comply with all of the following:

1. Bales shall be laid flat or on-edge in a runningbond.
2. Bales shall maintain thickness of not less than 18 inches (457mm).
3. Bales shall have a minimum density of 7.5 pounds per cubicfoot.
4. Gaps shall be stuffed withstraw-clay.
5. Clay plaster on each side of the wall shall be not less than 1 inch (25 mm) thick and shall be composedofamixtureof3partsclay,2partschoppedstrawand6partssand,oranalternative approved clayplaster.
6. Plaster application shall be in accordance with Section AS104.4.3.3 for the number and thickness of coats.

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Code Change No: RB370-16

Original Proposal

Section: AS107.1.1, AS107.1.2

Proponent: Tim Earl, representing GBH International (tearl@gbhinternational.com)

Revise as follows:

AS107.1.1 One-hour rated clay plastered wall. One-hour fire-resistance-rated nonload-bearing clay plastered strawbale walls shall comply with all of the following:

1. Bales shall be laid flat or on-edge in a running bond.
2. Bales shall maintain thickness of not less than 18 inches (457 mm).
3. Bales shall have a minimum density of 7.5 pounds per cubic foot.
4. Gaps shall be stuffed with straw-clay.
5. Clay plaster on each side of the wall shall be not less than 1 inch (25 mm) thick and shall be composed of a mixture of 3 parts clay, 2 parts chopped straw and 6 parts sand, or an alternative approved clay plaster.
6. Plaster application shall be in accordance with Section AS104.4.3.3 for the number and thickness of coats.

AS107.1.2 Two-hour rated cement plastered wall. Two-hour fire-resistance-rated nonload-bearing cement plastered strawbale walls shall comply with all of the following:

1. Bales shall be laid flat or on-edge in a running bond.
2. Bales shall maintain a thickness of not less than 14 inches (356 mm).
3. Bales shall have a minimum density of 7.5 pounds per cubic foot.
4. Gaps shall be stuffed with straw-clay.
5. one (1)$^1/_2$-inch (38 mm) by 17-gage galvanized woven wire mesh shall be attached to wood members with $1^1/_2$-inch (38 mm) staples at 6 inches (152 mm) on center. 9 gage U-pins with not less than 8-inch (203 mm) legs shall be installed at 18 inches (457 mm) on center to fasten the mesh to the bales.
6. Cement plaster on each side of the wall shall be not less than 1 inch (25 mm) thick.
7. Plaster application shall be in accordance with Section AS104.4.8 for the number and thickness of coats.

Reason: This appendix was added to the code last cycle. The fire test reports provided by the submitter stated that the bales tested had a density of 7.5 pcf. This section currently mandates a minimum bale density of 6.5 pcf. So, the appendix currently permits a 1-hour or 2-hour fire resistance rating for assemblies which have not demonstrated this level of performance in fire tests.

The ASTM E119 test involves measuring the temperature on the unexposed side of the specimen when it is exposed to heat from a furnace. A more dense bale will delay the temperature rise on the unexposed side and perform better in this test. As such, the fire test provided does not represent the worst case scenario, as it should.

Therefore, the 1-hour or 2-hour fire resistance rating should only be assigned to walls with bale density of at least 7.5 pcf, as no fire test data has been provided for bales of lesser density.

Cost Impact: Will increase the cost of construction
This proposal may increase the cost of construction if a user intended to build a 1-hour or 2-hour rated wall with bales of a density less than 7.5 pcf.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal clarifies the requirements of the code.

Assembly Action: **None**

Final Action Results

RB370-16	**AS**

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F7457

Date Submitted	11/26/2018	**Section**	107.1.2	**Proponent**	Richard Schauland
Chapter	Appendix S	**Affects HVHZ**	No	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review				

Comments

General Comments Yes

Alternate Language No

Related Modifications

Summary of Modification

Please refer to the attached file. The documentation for this proposal exceeds the 300 character limit.

Rationale

This appendix was added to the code last cycle. The fire test reports provided by the submitter stated that the bales tested had a density of 7.5 pcf. This section currently mandates a minimum bale density of 6.5 pcf. So, the appendix currently permits a 1- hour or 2-hour fire resistance rating for assemblies which have not demonstrated this level of performance in fire tests.

The ASTM E119 test involves measuring the temperature on the unexposed side of the specimen when it is exposed to heat from a furnace. A more dense bale will delay the temperature rise on the unexposed side and perform better in this test. As such, the fire test provided does not represent the worst case scenario, as it should.

Therefore, the 1-hour or 2-hour fire resistance rating should only be assigned to walls with bale density of at least 7.5 pcf, as no fire test data has been provided for bales of lesser density.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There may be little impact to local entities relative to the enforcement of the code. Local entities would have to verify that the bales meet the requirement through documentation provided.

Impact to building and property owners relative to cost of compliance with code

This proposal may increase the cost of construction if a user intended to build a 1-hour or 2-hour rated wall with bales of a density less than 7.5 pcf.

Impact to industry relative to the cost of compliance with code

This proposal may increase the cost of construction if a user intended to build a 1-hour or 2-hour rated wall with bales of a density less than 7.5 pcf.

Impact to small business relative to the cost of compliance with code

There will no impact to small business because this proposal is for residential buildings only.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The proposal will ensure the safety and welfare of the general public by ensuring that the 1-hour or 2-hour rated walls are rated as tested.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal does strengthen the Code, it ensures that the rated walls are built as tested.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The proposal does not discriminate against materials, products, methods, or systems of construction.

Does not degrade the effectiveness of the code

This proposal helps the effectiveness of the code by ensuring the rated wall is built as tested.

1st Comment Period History

F7457-G1

Proponent Richard Schauland **Submitted** 1/2/2019 **Attachments** No

Comment:

Mod. 7456 is related to this Mod.

AS107.1.2 Two-hour rated cement plastered wall. Two-hour fire-resistance-rated nonload-bearing cement plastered strawbale walls shall comply with all of the following:

1. Bales shall be laid flat or on-edge in a runningbond.
2. Bales shall maintain a thickness of not less than 14 inches (356mm).
3. Bales shall have a minimum density of 7.5 pounds per cubicfoot.
4. Gaps shall be stuffed withstraw-clay.
5. one (1)$^{1}/_{2}$-inch (38 mm) by 17-gage galvanized woven wire mesh shall be attached to wood members with $1^{1}/_{2}$-inch (38 mm) staples at 6 inches (152 mm) on center. 9 gage U-pins with not less than 8-inch (203 mm) legs shall be installed at 18 inches (457 mm) on center to fasten the mesh to thebales.
6. Cement plaster on each side of the wall shall be not less than 1 inch (25 mm)thick.
7. Plaster application shall be in accordance with Section AS104.4.8 for the number and thickness of coats.

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Code Change No: RB370-16

Original Proposal

Section: AS107.1.1, AS107.1.2

Proponent: Tim Earl, representing GBH International (tearl@gbhinternational.com)

Revise as follows:

AS107.1.1 One-hour rated clay plastered wall. One-hour fire-resistance-rated nonload-bearing clay plastered strawbale walls shall comply with all of the following:

1. Bales shall be laid flat or on-edge in a running bond.
2. Bales shall maintain thickness of not less than 18 inches (457 mm).
3. Bales shall have a minimum density of 7.5 pounds per cubic foot.
4. Gaps shall be stuffed with straw-clay.
5. Clay plaster on each side of the wall shall be not less than 1 inch (25 mm) thick and shall be composed of a mixture of 3 parts clay, 2 parts chopped straw and 6 parts sand, or an alternative approved clay plaster.
6. Plaster application shall be in accordance with Section AS104.4.3.3 for the number and thickness of coats.

AS107.1.2 Two-hour rated cement plastered wall. Two-hour fire-resistance-rated nonload-bearing cement plastered strawbale walls shall comply with all of the following:

1. Bales shall be laid flat or on-edge in a running bond.
2. Bales shall maintain a thickness of not less than 14 inches (356 mm).
3. Bales shall have a minimum density of 7.5 pounds per cubic foot.
4. Gaps shall be stuffed with straw-clay.
5. one (1)$^1/_2$-inch (38 mm) by 17-gage galvanized woven wire mesh shall be attached to wood members with $1^1/_2$-inch (38 mm) staples at 6 inches (152 mm) on center. 9 gage U-pins with not less than 8-inch (203 mm) legs shall be installed at 18 inches (457 mm) on center to fasten the mesh to the bales.
6. Cement plaster on each side of the wall shall be not less than 1 inch (25 mm) thick.
7. Plaster application shall be in accordance with Section AS104.4.8 for the number and thickness of coats.

Reason: This appendix was added to the code last cycle. The fire test reports provided by the submitter stated that the bales tested had a density of 7.5 pcf. This section currently mandates a minimum bale density of 6.5 pcf. So, the appendix currently permits a 1-hour or 2-hour fire resistance rating for assemblies which have not demonstrated this level of performance in fire tests.

The ASTM E119 test involves measuring the temperature on the unexposed side of the specimen when it is exposed to heat from a furnace. A more dense bale will delay the temperature rise on the unexposed side and perform better in this test. As such, the fire test provided does not represent the worst case scenario, as it should.

Therefore, the 1-hour or 2-hour fire resistance rating should only be assigned to walls with bale density of at least 7.5 pcf, as no fire test data has been provided for bales of lesser density.

Cost Impact: Will increase the cost of construction
This proposal may increase the cost of construction if a user intended to build a 1-hour or 2-hour rated wall with bales of a density less than 7.5 pcf.

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Report of Committee Action Hearings

Committee Action: **Approved as Submitted**

Committee Reason: This proposal clarifies the requirements of the code.

Assembly Action: **None**

Final Action Results

RB370-16	**AS**

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F8204

Date Submitted	12/15/2018	**Section**	46	**Proponent**	Robby Dawson
Chapter	46	**Affects HVHZ**	No	**Attachments**	No

TAC Recommendation Pending Review
Commission Action Pending Review

Comments

General Comments Yes **Alternate Language** No

Related Modifications

Summary of Modification

This proposal updates the NFPA referenced standards to the most recently published documents.

Rationale

The utilization of up to date referenced standards is a recognized component of complete system of building and fire safety. These updated references allow for the utilization of newer technologies and safety equipment to protect lives and property.

The NFPA Standards, which are developed in a consensus process by subject matter experts and users, have long been recognized as an important part of the International Codes as well as other construction documents and some have been updated since the publication of the 2018 edition of the IBC.

Updating these standards takes advantage of improvements in formatting of the documents, technology developed since the last edition, and reduces emerging risks in the built environment.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This will prevent local enforcers from utilizing outdated standards in the review and inspection of construction projects and will ease the burden of utilizing two different editions of these standards should a contractor desire to utilize the more up to date referenced standards.

Impact to building and property owners relative to cost of compliance with code

These standards must be complied with in accordance with the existing code provisions. This will allow them to use the most recent and up to date information available in the construct of properties.

Impact to industry relative to the cost of compliance with code

None identified

Impact to small business relative to the cost of compliance with code

None Identified

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

These are existing standards that have their connections with health, safety, and welfare previously established. There are no new base code provisions proposed with these standards.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Many of these NFPA Standards have undergone revisions to be better products through a revision and reformatting process driven by the code enforcement and engineering communities. The updated standards also take advantage of technology improvements since the last editions of the standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

It does not

Does not degrade the effectiveness of the code

It does not

1st Comment Period History

F8204-G1

Proponent Bryan Holland **Submitted** 1/10/2019 **Attachments** No

Comment:

I fully support the proposed modification to update the selected list of referenced NFPA codes and standards based on the reason statement provided by the submitter.

1st Comment Period History

F8204-G2

Proponent Robby Dawson **Submitted** 1/18/2019 **Attachments** Yes

Comment:

See attached summary of standards updated.

NFPA

13 - ~~16~~19: Standard for Installation of Sprinkler Systems

13D - ~~16~~19: Standard for Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes

13R- ~~16~~19: Standard for Installation of Sprinkler Systems in Low Rise Residential Occupancies

72 - ~~16~~19: National Fire Alarm and Signaling Code

211 - ~~16~~19: Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances

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Florida Building Code Proposal

Supporting Information to Code Changes F8180 and F8204

This document summarizes the changes to the NFPA standards that are proposed to be updated to the newest editions in these two code change proposals. All standards not noted here or in the proposals are not included as the ICC references the most recent standards in the balance of the noted documents.

Each of these summaries is derived from the "*Origin and Development*" section of each of the individual documents which contains a complete history of all previous revisions of the standard, as well as the significant changes from the most recent editions that are covered in this summary. The link noted in each summary will provide access to the most recent and full document referenced.

If there are any further questions or concerns, please contact:

Robby Dawson
NFPA Southeastern Regional Director
rdawson@nfpa.org
804-401-9063

NFPA 12-18: Standard on Carbon Dioxide Fire Extinguishing Equipment - The 2018 edition introduces a new requirement to conduct testing of integrated fire protection and life safety systems in accordance with NFPA 4. In addition, a new section on pipe hangers and supports and a new annex section on full discharge testing have also been added to more clearly explain the testing process. Finally, the equivalency statement was revised to use the standard text, which specifies that the authority having jurisdiction is responsible for approving an equivalent system, method, or device. www.nfpa.org/12

12A-18: Standard on Halon 1301 Fire Extinguishing Systems – The only change in the 2018 edition is in the annex chapter on nozzle and piping calculations (Annex H). It was revised to correct errors, comply with the *Manual of Style for NFPA Technical Committee Documents*, and clarify the details of the procedure. www.nfpa.org/12A

13 -19: Standard for Installation of Sprinkler Systems - The 2019 edition of NFPA 13 has undergone a complete reorganization to make the document more functional and easier to navigate. It is now fashioned in the order of how one would approach the design of a sprinkler system. Users will now find hazard classifications, water supplies, and underground piping at the beginning of the standard. Chapter 8 has been divided into several new chapters, breaking out general rules for sprinkler locations into one chapter and several other chapters specific to sprinkler technology. The storage chapters have also been reorganized by sprinkler technology and address ceiling-only design. Chapter 25 has been revised and now contains all the requirements for in-rack sprinklers.

Requirements for vertical pipe chases have been clarified as have requirements for electrical equipment rooms where sprinklers can be omitted. Additionally, new beam rules for residential sprinklers have been added and details provided.

Due to the extensive reorganization of the 2019 edition, new features have been added to help users locate requirements and identify sections with technical changes. The 2016–2019 Roadmap comparing the section numbers of the 2016 edition to the 2019 edition has been compiled and is located in the document after the index. It is provided for information only and should be used as a quick-reference locator. Technical changes from the last edition are also indicated and should be used as a guide. Shaded text identifies requirements that have been modified as a result of additions and deletions with the exception of tables and figures. New requirements are marked with the N symbol. www.nfpa.org/13

13D -19: Standard for Installation of Sprinkler Systems in One-and Two-family Dwellings and Manufactured Homes - The 2019 edition adds beam rules for sprinklers installed under and adjacent to beams (along with new figures), requirements for closets where ventless clothes dryers are installed, and requirements where pressure-reducing and pressure-regulating valves are installed. A section has been added to Chapter 12 to address inactive systems in structures left vacant for a period of time. Requirements for the use of well pumps as a water supply have been clarified. In addition, images have been added to clarify sprinkler location and clearances needed around fireplaces. www.nfpa.org/13D

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13R - 19: Standard for Installation of Sprinkler Systems in Low Rise Residential Occupancies - The 2019 edition adds a new definition for carport, as well as several new requirements that address where pipe and tube listed for light hazard can be used in an ordinary hazard application, beam rules for sprinklers installed under and adjacent to beams (along with new figures), waste and linen systems, installation of fuel-fired equipment, and obstructions in hallways. Chapter 9, Water Supplies, is reorganized, and the domestic demand tables are moved from the annex to the body of the standard, and values updated. In addition, new images clarifying sprinkler location and clearances needed around fireplaces are added. www.nfpa.org/13R

14 - 19: Standard for the Installation of Standpipe and Hose Systems - In the 2019 edition, the terminology has been made consistent throughout the document by changing the terms *outlet(s)* and *hose outlet(s)* to *hose connection(s)*, as this is the more appropriate term. The definitions for the terms *hose connection* and *hose valve* also have been revised to clarify what is meant by each term as used in the document. Definitions and requirements for *distance monitoring* and *automated inspection and testing* have been added because technology now allows for monitoring of certain conditions as well as inspecting and testing standpipe systems from a remote location.

A definition for *open parking garage* has been added along with a requirement that permits manual standpipes in open parking garages under a certain height. The signage for pressure requirements is no longer required when the pressure is 150 psi or less, as NFPA 13E requires a standard pressure of 150 psi unless a sign indicates more pressure is required. The maximum pressure permitted at any point in the system has been increased from 350 psi to 400 psi. Subsection 7.8.1 has been revised to clarify that the required pressure is to be calculated at the outlet of the hose valve. The hydraulic calculation procedures have been revised to clarify that additional standpipes should be calculated at the point of connection rather than at the topmost outlet.

Subsection 7.11.2 has been revised to delineate between a standpipe system main drain and individual standpipe drains. Revisions have been made to the required number of fire department connections due to the ease with which a single connection can be compromised. A new Chapter 13 on maritime standpipe and hose systems has been added. www.nfpa.org/14

16 - 19: Standard for the Installation of Foam-water and Foam-water Spray Systems - The 2019 edition of NFPA 16 was reorganized in a fashion consistent with that of the 2019 edition of NFPA 13 — to present information in the order in which it is needed when planning and designing a foam water sprinkler/spray system. Technical changes include the addition of requirements for working drawings using information from both NFPA 11 and NFPA 13 to provide a comprehensive list of information. Information about the type of foam concentrate piping was extracted from NFPA 11 to be consistent with that standard. Information was also extracted from NFPA 30 to address containment, drainage, and spill control. www.nfpa.org/16

20 - 19: Standard for the Installation of Stationary Pumps for Fire Protection - The 2019 edition of NFPA 20 is revised to recognize new technologies, including automated inspection and testing, distance monitoring, automated valves, and self-regulating variable speed fire pump units. Provisions are added to require that a single entity be responsible for acceptable fire pump unit performance. A new definition for *lowest permissible suction pressure* is added to provide a better understanding of the maximum available flow by connecting it to a suction pressure.

Requirements are added to clarify where manifolding of fire pump test piping is permitted, as well as where combining fire pump test piping with relief valve discharge piping is permitted. New definitions are added to differentiate between *standby power* and *alternate power* and to ensure proper application of these terms throughout the document. The term *very tall building* is defined and the requirements pertaining to these buildings are expanded, including those for automatic tank refill valves.

New requirements and annex material are added to help package designers through the evaluation of mass elastic systems. The requirements for hydraulic cranking systems are revised to distinguish between systems used as primary cranking systems and those used as secondary cranking systems.

Annex C is revised significantly to make data formatting more universal. www.nfpa.org/20

40 - 19: Standard for the Storage and Handling of Cellulose Nitrate Film - In the 2019 edition, the terms *standard roll* and *single- and double-roll containers* were replaced by terminology used by modern archivists. A new definition for *decomposition* was added, along with a new requirement for inspection and maintenance of portable fire extinguishers to comply with NFPA 10. Changes were made to the extended term storage vault requirements to allow for flexible storage configurations. Requirements for openings in, and exhaust capacities of, projection booths were

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revised to reflect modern practices and equipment, and a new requirement for temperature and humidity control was added. www.nfpa.org/40

72 - 19: National Fire Alarm and Signaling Code - The 2019 edition reflects a number of changes. The requirements for fire service access elevators and occupant evacuation elevators (OEE) were completely revised to coordinate with changes made in ASME A17.1/CSA B44. The requirements for occupant evacuation operation (OEO) are revised extensively. Annex text is added for clarification, as is Figure A.21.6, Simplified Occupant Evacuation Operation (OEO) (elevator system interface with the building fire alarm system based on ASME A17.1, Section 2.27.11; and *NFPA 72*, Section 21.6). In addition to the requirements for area of refuge (area of rescue assistance), Chapter 24 is revised to include requirements for stairway communications systems, elevator landing communications systems, and occupant evacuation elevator lobby communications systems.

A review was accomplished and revisions made to ensure alignment of *NFPA 72* with the *Manual of Style for NFPA Technical Committee Documents*. These editorial revisions include the breakout of paragraphs with multiple requirements into individually numbered paragraphs for each requirement and the minimization of use of exceptions. For many years, when codes required visual (or visible) notification in addition to audible notification, strobe lights meeting the requirements of Chapter 18 were used. With newer LED products that can be used for fire alarm, the terms *strobe*, *light*, and *visible* are essentially changed to *visual notification appliance*. The terms *speaker* and *high power speaker array (HPSA)* are changed to *loudspeaker* and *high power loudspeaker array (HPLA)* for consistency.

Perhaps the most significant change to the Code pertains to carbon monoxide. In August 2015, the Standards Council voted to relocate material that is in NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, to various chapters of *NFPA 72*. These requirements are essentially incorporated into Chapter 17 for carbon monoxide detectors; Chapter 14 for installation, testing, and maintenance; Chapter 29 for carbon monoxide alarms; and new Annex H. Chapter 29 is greatly expanded, and a significant amount of annex text has been added for explanation. NFPA 720 is to be withdrawn as the requirements are moved to *NFPA 72*.

Chapter 14, Inspection, Testing, and Maintenance, is greatly modified to incorporate valve-regulated lead-acid (VRLA) batteries. The inspection and testing requirements are revised in Tables 14.3.1 and 14.4.3.2. This also expands the annex language to address use and testing of these batteries. Several new terms are introduced, and these are defined in Chapter 3. www.nfpa.org/72

80 - 19: Standard for Fire Doors and Other Opening Protectives - The 2019 edition includes new definitions in Chapter 3 for *inspection mark* and *field label* to assist in the application of inspection, testing, and maintenance provisions in Chapter 5. Chapter 4 contains updated provisions for job site preparation of fire doors for fire pins. Subsection 4.8.4 has been updated with new provisions for measuring clearance under the bottom of fire doors and with a new requirement addressing bottom clearance with the presence of latching hardware devices. Chapter 5 has been updated to include fire protective curtain assemblies in its application and a new section that addresses inspection marks. New subsection 19.2.2 requires damper manufacturer's installation and maintenance instructions be maintained on site for new damper installations. The detailed damper installation criteria from Chapter 19 have been deleted and left with reliance on the damper manufacturer's installation instructions and the damper listing. Chapter 19 also continues to update the requirements for the inspection, testing, and maintenance of fire and combination fire/smoke dampers with the addition of new 19.5.2.3.3 for a remote inspection method. A new 19.5.1.3 clarifies application of inspection requirements for single inaccessible dampers.

Annex A contains new and revised figures for typical steel door frame installations. Globally, ANSI UL 10B, *Fire Tests of Door Assemblies*, and ANSI UL 10C, *Standard for Positive Pressure Fire Tests of Door Assemblies*, have been added as equivalent standards to NFPA 252. Editorial updates have been made to Chapter 4 and Chapter 5 to clean up duplicate language and relocate text to the appropriate sections. Referenced publications and extracted sections have been updated as needed. www.nfpa.org/80

92 - 18: Standard for Smoke Control Systems - New to the 2018 edition of NFPA 92 is the addition of requirements regarding the verification of dedicated smoke control equipment through use of the weekly self-test function. A new annex on tenability was added to provide guidelines for designers to assess tenable conditions in spaces protected by smoke control systems, in connected spaces, and of means of egress elements during the operation of a smoke control system. www.nfpa.org/92

105 - 19: Standard for Smoke Door Assemblies and Other Opening Protectives - Changes for the 2019 edition of NFPA 105 focus primarily on the provisions for smoke dampers. New 7.3.1.2 requires smoke damper

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manufacturer's installation and maintenance instructions be maintained on site for new smoke damper installations. Chapter 7 also continues to update the requirements for the inspection, testing, and maintenance of smoke dampers with the addition of new 7.6.3.3 on a remote inspection method. A new 7.6.2.3 clarifies application of inspection requirements for single inaccessible dampers. Section 7.5 contains new requirements to further clarify and update the process for smoke damper acceptance testing. A new opening protective is addressed by new Chapter 9, which applies to smoke-protective curtain assemblies for hoistways. A new definition is added to Chapter 3 to describe a smoke-protective curtain assembly for hoistways. Referenced publications and extracted sections have been updated as needed. www.nfpa.org/105

110 - 19: Standard for Emergency and Standby Power Systems - For the 2019 edition, several existing requirements have been clarified to assist users with the proper application. Clarifications include the location and access to the remote emergency stop switch, testing of fuel in accordance with the manufacturer's recommendations in lieu of an ASTM standard, and battery charger specifications. www.nfpa.org/110

111 - 19: Standard for Stored Electrical Emergency and Standby Power Systems - In the 2019 edition, Table 4.2.2 has been revised to cover the interruption time without reference to specific SEPSS types. www.nfpa.org/111

211 - 19: Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances - The 2019 edition includes updated references such as product listings. In addition, installation of decorative shrouds at the termination of a factory-built chimney are permitted per the standard requirements. www.nfpa.org/211

652 - 19: Standard on the Fundamentals of Combustible Dust - The 2019 edition of NFPA 652 contains the following changes: NFPA 652 is intended to be the fundamentals document for combustible dust. As such, definitions that are considered fundamental to the topic of combustible dust reside in NFPA 652 and be extracted into the industry and commodity-specific standards. This ensures consistency in documents dealing with dust. Changes to this edition reflect this, and several definitions are added from industry and commodity-specific documents that also are considered fundamental to combustible dust.

Provisions were added to designate the requirements that are meant to be retroactive. Management system requirements, such as housekeeping, personal protective equipment (PPE), and hot work are now in Chapter 8, Management Systems.

Material was added to Chapter 5 that helps the user evaluate the requirements for mixtures of types of combustible dust, such as a mixture containing metal dust and agricultural dust.

Changes were made to the deadlines are included for the completion of dust hazard analysis (DHA) for existing processes and facility compartments. The deadline for completion of a DHA is now September 7, 2020. This aligns with industry and commodity-specific dust standards. NFPA 652 now also requires that the DHA be reviewed and updated every 5 years.

Chapter 9, Hazard Management: Mitigation and Prevention, was expanded to include requirements on equipment design and operation. This includes air material separators (AMS), air moving devices (AMDs), duct systems, sight glasses, abort gates and dampers, bulk storage enclosures, size reduction equipment, pressure protection systems, material feeding devices, bucket elevators, enclosed conveyors, mixers and blenders, and dryers. Requirements for fans for continuous dust control are also added. Changes are made to the requirements for equipment isolation to remove the exemption for small diameter ductwork. Note that this is consistent with the current requirements in NFPA 654.

The committee modified the material on electrostatic discharges to provide clarity to the user regarding conductive equipment, bonding and grounding, flexible connectors, particulate transport rates, grounding of personnel, flexible intermediate bulk containers (FIBCs), and rigid intermediate bulk containers (RIBCs). www.nfpa.org/652

750 - 19: Standard on Water Mist Fire Protection Systems - The 2019 edition of NFPA 750 contains updates that clarify the definitions of a gridded water mist system and twin-fluid system, which devices can be used as automatic means, which components can be used as provisions for cleaning, and the requirements for pressure-indicating devices used on a common manifold system. Further updates clarify that a listed system requires that any mixed components or systems have been tested together and expand requirements to include configurations allowed in current listed solutions. New sections have been added specifying design, testing, and installation of preaction water mist systems. Another section has been added to prevent debris and contaminants from entering a water mist system

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by requiring a strainer or filter after the fire department connection (FDC). It also clarifies the location of the FDC on a low-pressure water mist system. Throughout the standard, the terms *pressure container* and *pressurized container* have been replaced with the newly defined term *pressure vessel*, and the phrase *safety device to release excess pressure* has been replaced with *pressure relief device*. These changes were made to maintain consistency with industry practices and terminology. This edition also incorporates revisions that update referenced documents, extracts, and formatting to comply with the *Manual of Style for NFPA Technical Committee Documents*. www.nfpa.org/750

780 – 17: Standard for the Installation of Lightning Protection Systems - For the 2017 edition, new requirements have been added relative to physical on-site inspection of the completed installation and for periodic inspections or testing for compliance to this standard per the authority having jurisdiction. New definitions have been added for the following terms: *ground loop conductor*, *integral lightning protection system*, *mast-type lightning protection system*, *rated impulse withstand voltage level (withstand voltage) (UW)*, *smart structure*, *solar array*, and *solar panel*. Those definitions add clarity to the terms as used in the standard.

Several figures illustrating air terminal protection for lower roof protection have been updated. New requirements have been established for test and connection points for concrete-encased electrodes to enable periodic maintenance and testing of the ground system. Zero property line conditions have been re-evaluated and revised. New bonding requirements have been added for long horizontal metal bodies on roofs. The Committee revised many requirements pertaining to ungrounded metal bodies, removing the term isolated (ungrounded) for consistency. Section 5.3 pertaining to Facilities That Handle or Process Combustible or Explosive Dust has been updated, providing specific reference to NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*; NFPA 122, *Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities*; and NFPA 664, *Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities*. Section 5.9 provides new criteria for installations on fabric structures. Chapter 7, Protection for Structures Containing Flammable Vapors, Flammable Gases, or Liquids That Can Give Off Flammable Vapors was rewritten. Sections in Chapter 8, Protection of Structures Housing Explosive Materials, that pertain to single or multiple masts, railroad tracks, installation of air terminals on earth-covered magazines, wharves, and piers for explosives operations and cranes were revised. Chapter 12, Protection for Solar Arrays, was revised to provide more specific criteria.

Two new annexes, Annex J, Protection of Smart Structures, and Annex K, Guide to International Standards Dealing with the Selection of SPDs for Use on Photovoltaic (PV) Installations, have been added to the 2017 edition. Annex L, Lightning Risk Assessment, has been revised to provide greater clarity and correlation of requirements with other lightning protection standards. www.nfpa.org/780

***NOTE**: This is the suggested alternative offered by Bryan Holland to the original proposal.*

2001 - 18: Standard on Clean Agent Fire Extinguishing Systems - For the 2018 edition, the chapter on inspection, testing, maintenance, and training was completely reorganized to improve usability of the standard and to comply with the *Manual of Style for NFPA Technical Committee Documents*. As part of this revision, the content was split into two distinct chapters: Chapter 7, Approval of Installations, and Chapter 8, Inspection, Servicing, Testing, Maintenance, and Training. Definitions of *inspection*, *maintenance*, and *service* were added, as well as a requirement for integrated fire protection and life safety systems to be tested in accordance with NFPA 4. In addition, the standard now requires an egress time study for all clean agent systems, not just those where the design concentration is greater than the NOAEL. A definition of *abort switch* was added, and the definition of *clean agent* was revised. A requirement to install dirt traps at the end of each pipe run was added. The requirements for pipe and fittings were reviewed and updated in accordance with the latest reference standards. A new section on pipe hangers and supports was added. New requirements regarding releasing panels were added. www.nfpa.org/2001

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